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ABSTRACT

This document contains papers from a conference on the economic impact of Vocational Education and Training (VET) in Australia and elsewhere. The following papers are included: "Introduction" (C. Selby Smith, Fran Ferrier); "Opening Address" (Peter LeP. Darvall); "Trends and Issues in Vocational Education and Training: A Perspective from Europe" (Olivier Bertrand); "Learning to Earn All over Again: Current Issues in Vocational Education and Training in the United States" (W. Norton Grubb); "Developing a National Approach for VET" (Kenneth Wiltshire); "Dimensions of VET in Australia" (Gerald Burke); "The Training Market Reforms and Their Impact on the Vocational Education and Training System" (Damon Anderson); "The Implications of VET for Earnings" (Michael Long, Phillip McKenzie); "The Globalisation Process and Changes in the Australian Workforce between 1986 and 1991: Implications for Education and Training" (Leo Maglen, Chandra Shah); "Skills for Small, High Tech Exporters: Overcoming the 'Transition' Problem" (Richard Curtain); "Firm-Based Training in the United States: Implications for the Education and Training 'System'" (W. Norton Grubb); "Education and Training at the Ford Motor Company" (Noel Miller); "Competency Based Training: Has It All Gone Wrong?" (Peter Ewer, David Ablett); "Training's Role in Implementing the Restructuring of Office Based Work in

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the APS (Australian Public Service)" (Chris Selby Smith, Joy Selby Smith); "Bringing Management Education to the Workforce" (John D. Vines); "Industrial Relations, and Vocational Education and Training in Australia" (Jane Carnegie); "Enterprise Bargaining, Industrial Relations and Training Reforms in Australia" (Julian Teicher, Aija Grauze); and "Developing a Future Research Program" (Barry McGaw). Many papers include substantial bibliographies. (MN)

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The Economic Impact of Vocational Education and Training

Edited by

C. Selby Smith and Fran Ferrier

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The Economic Impact of Vocational Education and Training

Editors' Introduction

The papers in this volume were presented at a Conference organised by the Monash University-Australian Council for Educational Research Centre for the Economics of Education and Training. The Conference was held at the Edmund Barton Centre in Moorabbin, Melbourne on Thursday 7 and Friday 8 December 1995. Contributors had the opportunity to revise their papers prior to publication in the light of discussion at the Conference.

We were very pleased that Professor Norton Grubb from the National Center for Research in Vocational Education at the University of California, Berkeley and Dr Olivier Bertrand from France, who has worked closely with UNESCO, OECD and the French Government on VET matters, were able to visit Australia to take a leading role at the Conference and to participate in a range of other discussions throughout Australia. Dr Marianne Durand-Drohin from the OECD in Paris had been expected to participate, but in the event was not able to do so due to ill-health; and we are particularly grateful to Dr Bertrand for stepping into the breach at short notice (and for making such a valuable contribution).

Also it is a pleasure to acknowledge the valuable assistance provided by Vivienne Roberts in preparing the papers for publication.

October 1996

C. Selby Smith
Fran Ferrier

INTRODUCTION

C. Selby Smith and Fran Ferrier
Monash University-ACER Centre for the Economics of Education and Training, Melbourne

A Conference on the economic impact of vocational education and training was held at the Edmund Barton Centre in Moorabbin on 7 and 8 December 1995. It was organised by the Centre for the Economics of Education and Training which is a collaborative venture of Monash University and the Australian Council for Educational Research (ACER).

The Centre for the Economics of Education and Training (CEET) was established in 1992. During 1994 the Centre was selected by the Research Advisory Council of the Australian National Training Authority as a VET Research Centre, focusing on the economic impact of VET. In addition to conducting research funded by ANTA's Research Advisory Council, the Centre is involved in a range of research projects funded by other government and non-government bodies, including the Australian Research Council, the Department of Employment, Education, Training and Youth Affairs; and the Organisation for Economic Cooperation and Development.

CEET's research involves both macro and micro studies of VET and the economy. Primarily it focuses on the changing nature of the Australian economy, and the role and contribution of VET to economic and social development. Much of the research is fundamental and concerned with improving the information and knowledge base for policy development and implementation. Research recently undertaken by CEET covers a broad range of topics including: the impact of globalisation on the occupational structure; development of a model for analysing student flows and completions as part of a study of labour market supply and demand; supply and demand projections in the professions and skilled occupations; the size and distribution of VET provision and associated economic outcomes; linkages between enterprise agreements and the provision of training; pricing options for TAFE courses; the dimensions of education and training in Australia; a review of statistical data for VET research; economic investment in and returns on VET; a review of policy and research literature on the training market and associated policy initiatives; and the impact of training market reforms on public and private training provision.

Through the sponsorship of visits by international VET experts and creation of links with overseas VET research centres, CEET aims to expand and enrich VET research and the relevant policy cultures in Australia and to lay the foundations for further cross-fertilisation of ideas and knowledge via cross-national research projects. CEET has established productive links with international researchers and centres for VET research in the USA, Europe and Asia. Phillip McKenzie from ACER, one of the co-Directors of CEET, is on secondment to the OECD in Paris for 1996 and 1997. In 1995, CEET organised visits to Australia by Professor Norton Grubb of the National Centre for Research in Vocational Education in the United States and Dr Olivier Bertrand, consultant to the OECD. Overseas researchers to visit CEET in the next year and whose work will be made widely available to researchers and other stakeholders in the national VET system include Professor Russell Rumberger of the University of California at Santa Barbara, and Dr Joachim Reuling of the German Federal Institute for Vocational Training in Berlin.

CEET has placed high priority on co-operative activities. The Centre has formed partnerships on a range of projects in addition to collaborating in the development of research submissions for ANTARAC and other bodies with researchers elsewhere, such as in TAFE Institutes and State Training Authorities. For example, CEET is collaborating with the National Key Centre for Industrial Relations at Monash University on an evaluation of small business and enterprise Australian Vocational Training Scheme projects for DEETYA. CEET staff are currently involved in a national evaluation of 'user choice' pilot projects across Australia for ANTA. Close links have been established with the University of Melbourne, where Professor Maglen took up the first Chair in vocational education and training in late 1995, and joint research and development activities are developing. A study of the impact of VET research on policy and practice is to be undertaken with the Research Centre for Vocational Education and Training (RCVET) at the University of Technology, Sydney. An ARC-funded study of supply and demand across a wide range of occupations and qualifications is being undertaken jointly with the Centre of Policy Studies and the Centre for Population and Urban Research at Monash University. Workshops across Australia on the use of statistical data in VET research are being organised with the National Training Markets Research Centre in Adelaide.

Since its inception CEET has sought to promote ongoing interaction between researchers, policy makers and practitioners; to disseminate the research work of the Centre; and to stimulate and promote research and research training in the economics of VET. In addition to participating in the Conference reported here, Professor Grubb visited Brisbane and Sydney, while Dr Bertrand visited Adelaide and Canberra for discussions with a range of VET stakeholders (both participated in similar discussions in Melbourne). Members of the Centre seek to target particular groups of stakeholders, to discern their priorities for research, and to communicate the nature of the Centre's research program and its results. This is assisted by CEET's research partnerships, contacts made through CEET membership of VET committees and boards, through the Centre's own VET advisory committee, and through the frequent interactions arising from the research projects (e.g. consultancies for the OECD and the user choice study for ANTA). CEET staff have organised and participated in a diverse range of research dissemination activities: the Conference reported here, for example, was attended by a hundred participants from around Australia.[1]

The Conference papers which are the subject of this book are primarily concerned with the economic impact of vocational education and training. The Opening Address was delivered by Professor Peter Darvall, the Deputy Vice-Chancellor for Research at Monash, in which he noted the major changes which have been occurring in the size, structure and objectives of education in Australia, the importance of carefully examining the links between economics and education, and the (then) Prime Minister's view that vocational education and training are an important part of Australia's social, industrial and economic future.

Two papers setting the international context for VET developments in Australia were then presented by overseas experts, one from North America and one from Europe, invited by the Centre. Dr Bertrand's paper highlighted the main trends which have affected VET systems in European countries during the last two decades. While the paper could not fully account for the wide diversity of situations in Europe it assists comparisons with recent developments in other countries, particularly in Australia and the United States, which were discussed in other papers at the Conference. Considering VET developments in Australia against the background of those in Europe Dr Bertrand raises three sets of questions. The first set concerns the relationship between developments in VET and the labour market. The second set of questions relates to the new emphasis on national standards ("which may be seen from two points of view: the issue of centralisation compared to decentralisation; and the problems raised by the

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[1] People who wish to receive the CEET Newsletter or to seek further information on CEET research activities should contact Mrs Val Newson on Tel: (03) 9905 9157, Fax: (03) 9905 9184 and email *val.newson@education.monash.edu.au*.

competency-based approach"). The third set of questions concerns the economic and financial aspects of training, where Dr Bertrand suggests that compared to the continental European countries, Australia seems to put more emphasis on an increased training effort by enterprises (which "implies a serious change in their attitudes"). In concluding Dr Bertrand notes the temptation to transfer pieces of a foreign experience to a different national culture. While accepting that "one should be careful not to interpret differences as a kind of permanent and fixed feature which would be for ever attached to a people" he takes the position that the issues he raises "should rather be approached in terms of the result of history and of a set of institutional arrangements".

Professor Grubb notes the emerging consensus in the United States that American firms provide too little training to their workers, at least in comparison with their major competitors in Europe and Japan. He examines a number of possible explanations for this situation. Professor Grubb accepts that "by examining other countries' education and training systems, it is possible to see what the important elements of such a system might be, and which elements are the subject of reforms that are being discussed in different areas". But a deep pessimism underlies his analysis and a profound questioning of whether the necessary changes can really be agreed and implemented. He takes the view that "the American political and economic systems, with their preferences for limited intervention, lax regulation, and market-based solutions, make intervention and coordinated policy difficult, and so some potential reforms and possible borrowings from other countries ... are difficult to imagine being implemented in the United States". His conclusion, based on extensive research and careful examination of a wide range of evidence, is strikingly at odds with the optimistic "can-do" approach sometimes associated with American attitudes. "In the end, the motivation of economic decline may not be enough" to cause the changes in VET which he advocates actually taking place.

The next session of the Conference heard papers from Professor Henry Ergas and Professor Ken Wiltshire. Professor Ergas, formerly of the OECD and Monash University, currently at Harvard University and the Australian Competition and Consumer Commission, spoke about structural change in Australian industry and the implications for vocational education and training. In his 1994 study of Australian manufacturing firms with Mark Wright he had found that intensified competition, whether through expanded international exposure or otherwise, tended to force managers to tackle inherited inefficiencies. The actions managers take can include greater emphasis on training, as well as on other factors such as research and development, product quality and customer satisfaction, and the development of more productive co-operative cultures within enterprises. In his present study of some four thousand firms he found a strong relationship at the level of the individual enterprise between research and development, overall learning and specific training. He noted that these relationships appear to be particularly strong in medium-sized firms. He also suggested that a wider distribution of skills across the population (holding the aggregate quantum of skills constant) appears to be associated with greater learning and more rapid growth in the total stock of human capital. Unfortunately, it is not possible to reproduce his full paper in this volume.

Ken Wiltshire, Professor of Public Administration at the University of Queensland, gave a wide-ranging and stimulating presentation. He argued that while there is currently a "golden age" for vocational education and training in Australia we do not really have a national approach to VET, "we have instead a loose confederation of interests whose collective will is still not producing overall leadership and direction for the sector". In his view a national approach is desirable and it "must maintain the three fundamental factors which have underpinned the success of the sector to date: the nation's economic needs; balancing the role of the system in catering for the educational needs of the individual, the society and the economy; and maintaining equity of access". Wiltshire suggests that "perhaps the most disturbing element of the present system is our low level of understanding of the sector itself". In discussing what needs to be done he focuses on four elements: research; curriculum and assessment; governance and commercialisation; and funding. In the final section of the paper

Wiltshire outlines his preferred national approach, a cooperative middle way, "reflecting the realities of constitutional powers, fiscal arrangements, and current location of expertise"

The three subsequent papers were presented by members of CEET and reflect research on VET recently undertaken in Australia. Associate Professor Gerald Burke discussed the size and structure of VET in Australia, Mr Damon Anderson presented information on private providers and the training market and discussed their implications, and Mr Michael Long and Dr Phillip McKenzie from ACER considered the implications of vocational education and training for earnings, drawing on the 1993 Australian Bureau of Statistics *Survey of Training and Education*.

The paper by Gerald Burke concentrates firstly, on students and persons in training, and secondly, on expenditure. If we do not know what is occurring in VET then it is difficult to judge how well VET is responding to the changing demands of the economy, how efficient or effective it is, or how equitably resources are allocated. Burke's paper is typically careful and thorough: it shows that the available data sources "are not adequate to give more than a rough understanding of some major aspects of VET". Burke draws on a range of sources, including earlier studies undertaken in CEET. He also notes that there are in train many developments which are intended to make the VET data collections more comprehensive and coherent. Nevertheless he concludes that "data is scant in a number of areas and improvement in data is a major concern for government authorities"

Damon Anderson's paper examines the changes which have occurred in the structure, size, composition and balance of the VET system in Australia following the training market reforms of the Keating Government, with particular attention being given to private providers. Anderson argues that "by reconstructing the regulatory and financial basis of the VET system, the training market reforms have created the conditions for private sector growth and are facilitating a rapid transition from a peripheral to a parallel private training market within the context of a unified national VET system". Anderson concludes that the training market reforms "are fundamentally transforming the structure, size, composition and balance of the national VET system in Australia", not least by largely standardising the legal, regulatory and financial conditions under which public and private providers operate. He argues that "the former dual sector structure comprising a mass public TAFE sector and a peripheral private sector has been replaced by a more complex trisectoral structure comprising a regulated public sector, a partially regulated private sector and an unregulated private sector". In his view the only major factors constraining the full-blown emergence of a parallel private training sector "are financial: continuing direct government subsidisation of recurrent program provision and infrastructure (staff, capital and equipment) in the public TAFE sector"

The paper by Michael Long and Phillip McKenzie is based on analysis of data from the 1993 *Survey of Training and Education*, which was undertaken by the Australian Bureau of Statistics. Long and McKenzie use the ABS data to examine the influence of different forms of post-school education on the earnings of full-time employees. Noting that, compared to the field of higher education in Australia, there has been only limited work on the economic benefits of participation in VET (and in TAFE in particular) they argue that resolution of the question as to whether vocational education has a positive impact on the earnings of employees "is important for policy development in the VET sector, and for helping individuals and enterprises to make informed decisions about education and training programs". They note that, in addition to the usual problems of conceptualising and measuring the benefits and costs of education, there are particular difficulties in conducting such analyses in VET, including "the limited availability of data on VET participants, the wide age range of VET students, and the diversity of VET programs". Their analyses indicate that, holding other factors equal, completion of post-school qualifications has a positive impact on earnings. They found that the earnings differentials were highest for those who achieved degrees, associate diplomas, skilled vocational qualifications (for females) and basic vocational qualifications (for males). McKenzie and Long conclude that their results "provide broad support for efforts to lift education participation rates in Australia"

The final session of the first day of the Conference included two papers, the first by Professor Leo Maglen (of Melbourne University and CEET) and Dr Chandra Shah from CEET, the second by Dr Richard Curtain, a consultant to CEET. Both papers refer to recent and continuing research on vocational education and training in which CEET is involved, and adopt an international, global perspective on work and training. The paper by Maglen and Shah is concerned with the globalisation process, and changes in the Australian workforce between 1986 and 1991 – and with the implications this may have for education and training in Australia. Their framework is derived from the classification of jobs suggested by Robert Reich in his 1991 book *The Work of Nations*, in which he considered the future of work in a rapidly changing global environment. The paper by Maglen and Shah is a report of work in progress and, although the full implications of their study are not yet available, the initial picture is somewhat gloomy. They show that, over the period 1986 to 1991, "workers with trade qualifications, undergraduate diplomas (especially for males, less so for females) and 'other' post-school qualifications typically competed poorly in all broad occupational categories. Encouragingly, however, they did manage to expand their employment amongst symbolic analysts". In their next report on the project Maglen and Shah intend to include further statistical analysis of the relative performance of VET qualified workers, by workforce experience, and to discuss the directions in which this type of analysis point VET policy makers, curriculum designers and practitioners.

Dr Curtain's paper is concerned with skills required by "small high tech exporters" and is drawn from a larger study in which he used case study methodology to investigate and report on the skill formation methods used in small to medium sized, leading-edge manufacturing firms. His research relates to the important debate about "the appropriate ways for public policy to assist small and medium sized enterprises to lift their export performance". Dr Curtain is particularly concerned with the problems faced by such enterprises, which can grow rapidly in employment, sales and exports, in moving "from an early establishment phase to consolidation for further growth". Drawing on eight case studies he found that, in most cases, the enterprises had failed to make a successful transition from "an *ad hoc*, craft mode of product development to an organisational structure that is capable of further expansion and growth". This is a worrying conclusion and Dr Curtain argues that "one aspect of the failure to implement new systems is the general absence of sophisticated human resource policies", despite the importance attached by these enterprises to "the role of research and development and their reliance on highly qualified knowledge workers". However, Curtain argues that, on the other hand, there is some evidence that such firms are responding to the difficulties they face by participating in learning networks, which "offer considerable potential for creating the level of cooperation small firms need to replicate the success of high tech startups in North America and Europe".

The first session on the second day of the conference focussed on training at the enterprise level. It included four papers, the first by Professor Grubb, which surveys a wide range of North American developments and provides valuable background information. The second paper, by Mr Noel Miller from the Ford Motor Company, outlines the extent of this company's education and training activities and the importance attached to them by senior management. The third paper, by Peter Ewer and David Ablett, gives a trade union perspective on VET reform in Australia and discusses concerns with competency-based training. The final paper in this session by Chris and Joy Selby Smith, relates to the role of training in the introduction of a major organisational innovation (the restructuring of office-based work in the Australian Public Service).

Professor Grubb's paper is a wide-ranging discussion of current issues in vocational education and training in the United States, at the secondary level and at the post-secondary level, with particular attention to the sub-baccalaureate labour market and arrangements for short-term training. His paper is a striking illustration of the mutual benefits of appropriate international exchange. He notes the "renewed emphasis on using schools and colleges as mechanisms of economic growth and competitiveness – that is, on the vocational aspects of schooling in a general sense" in the United States.

However, he argues that there has been much less consensus on what needs to be done and "many fewer reforms that have affected high schools, colleges and job training programs". He points out that, in many ways, "the current debate is a recapitulation of one around the turn of the century" in the United States: the issues then were also of how schools could assist economic growth and of "learning to earn". Grubb argues that one of the puzzles is "the disjunction between a near-consensus on need to change ..... and the limited amount of reform"; and concludes that when *national* problems arise the ability of the *federal government* to shape education "is quite limited" (and has recently become even weaker). In terms of learning from VET experience abroad he reaches the rather pessimistic conclusion that borrowings from other countries often take specific practices out of context, "changing practice on the periphery of the education system, but without reforming the other institutions necessary to support real reforms".

Professor Grubb argues that there is a "central dilemma" in seeking to move towards reform of a complex education and training system while operating "within a political and economic atmosphere committed to individualism and *laissez faire*". His conclusion is that the separation of *training* from *education* has been counterproductive: "the real economic rewards are to be found in the educational system, not in job training". He accepts that "the glimmerings of a real system have now emerged", but concludes that the 'system', if it can be called that without fundamental inaccuracy, "is disconnected, fragmented and – particularly for those individuals who gain access through short-term job training and vocational educational programs – not especially effective". Grubb also concludes that more attention has been given to enrolments than to outcomes; and that the 'system' places virtually the entire burden on often ill-informed and under-resourced *students* to find their way among a variety of programs (with results which he argues "are probably socially inefficient"). In his view there is every reason to be concerned about the progression from school to work in such an unregulated market, since "it is easy for students to make mistakes, to prepare themselves for jobs that do not exist or are short-lived, to fail to gain competencies that are necessary for long-run mobility – or simply to be unable to decide what they most want to do, and therefore to mill around aimlessly without making much progress". The paper combines refreshing breadth with an immense grasp of detail, a passion for equity with a strong commitment to efficiency in VET.

Given the significant roles of unions and employers in vocational education and training, CEET was pleased that Noel Miller from the Ford Motor Company and David Ablett from the Amalgamated Manufacturing Workers' Union with Peter Ewer from the Union Research Centre on Organisation and Training were able to participate. Noel noted the importance attached to education and training at Ford, the extent and range of their education and training programs and the contribution to the development of a learning culture within the organisation. He outlined some of Ford's training programs, which are "designed to support the business imperatives of the company". Under Ford's private provider status the company is registered, through the Victorian Office of Training and Further Education, to develop and deliver modules in a range of accredited courses relevant to the company's activities. Ford views the training programs it has developed as contributing significantly to the successful establishment of a range of partnerships with other accredited education and training providers, while the achievement of private provider status has helped Ford to consolidate much of what it had previously achieved. Senior management at Ford see the development of effective education and training programs "as being absolutely essential if we are to achieve our goals of continuous improvement and Total Quality Excellence". Ford also believes that the education and training model it has developed in conjunction with its education and industry partners, "is helping the company's employees to achieve their true potential". In implementing the programs, it is of interest that Ford has decided to utilise secondary and primary teachers, who are hired annually under the Victorian Government's teacher release to industry program. Mr Miller argued that this program "has proven to be an outstanding success for both parties".

In the paper by Peter Ewer and David Ablett a sceptical approach is taken to the actual practice of competency-based training in Australia. The authors write from a trade union perspective and their comments focus as much on the politics and equity aspects of competency-based training (CBT) as on its economics. They argue that "training reform was expected to carry far too much weight in economic and political terms", and that training reform tended to become "industry policy by other means". They are concerned that CBT has, in certain cases, been reduced to a technique of control (although they now see this as "an outcome embedded in its very design") and that a desirable feature of the apprenticeship system (the process of socialisation into a craft or calling) has been "one of the unfortunate casualties in the tidal wave of CBT". They are critical of competency standards developed through the ITAB structure as an inherently top-down, technocratic process ("through which the industry parties, and contract researchers, specify what they think workers *should* know"). They argue that the competency process is having only a marginal impact on industry practice, partly because of its complexity, is failing to address adequately the training needs of women workers and in some cases the standards appear to be attempting to "define acceptable personal aptitude and even appearance, rather than skill"; and that "the industrial infrastructure required to disseminate the unified model of training reform was marginalised by enterprise bargaining before it had time to become operational". These are strong criticisms, especially when coming from authors who are genuinely committed to the interests of labour and closely associated with a major union which has had a significant influence on the training reform agenda.

The final paper in this session of the Conference, concerned with VET at the enterprise level, was a study of the role of training in the implementation of a major organisational innovation, the restructuring of office-based work in the Australian Public Service between 1987 and 1990. This was the largest restructuring exercise ever undertaken in the APS and affected nearly 115,000 staff i.e. some two-thirds of all permanent staff. Training was an important element of the restructuring exercise for management, unions and individual staff. The study on which the paper by Chris and Joy Selby Smith is based was a means of identifying, in a particular context, issues concerning the linkages between training, competitiveness and the quality of working life which may be applicable more generally. It also brings into focus approaches to learning and training which are developed in the innovation literature, but which are often not taken into account in VET fora. The study concluded that training, defined as a formal process incorporating instruction, appeared to have made a significant contribution to effective implementation of the new arrangements, but that forms of learning other than training were also involved (emphasising that training is a sub-set of learning in the workplace). However, the relative importance of training varied among the different objectives of the restructuring exercise, training's contribution could be indirect as well as direct, and training appeared to have a clear time-cycle. Furthermore, the study underlined that changes in work organisation, technology, corporate management arrangements and the development of skills and training processes are all intimately connected, so that changes in one element are not independent of changes in the others. "analyses of the effects of training will be incomplete if they do not take these interrelationships into account". It is also of interest that the expanded commitment to training by APS management and individual agencies was important in securing cooperation from major stakeholders (such as relevant unions and individual staff), which facilitated the introduction of other efficiency-enhancing changes which were wider than, perhaps even apparently quite unrelated to, the implementation of this particular organisational innovation for office-based work.

The penultimate session of the Conference considered aspects of the important connection between vocational education and training in Australia and industrial relations. This session contained three papers, the first by Mr John Vines, the innovative Executive Director of the Association of Professional Engineers, Scientists and Managers, Australia (and a member of the Karpin Task Force on management education in Australia), the second by Ms Jane Carnegie, formerly with the Australian Council of Trade Unions and now with ANTA, and the third by Associate Professor Julian Teicher, an

Associate of CEET and Deputy Director of the National Key Centre in Industrial Relations at Monash University, with Ms Aija Grauze from CEET.

John Vines noted the growing awareness in Australia of the importance of continuing professional development. Drawing on his union experience and his membership of the Industry Task Force chaired by David Karpin he argued that, "just as professional level employees are embracing the concepts of continuous learning, so too will the more vocationally trained members of the workforce and particularly those in or aspiring to reach frontline manager positions". He argued that a basic feature of the most effective management development practices is "them being primarily enterprise focused", that they need to have a more "customer driven rather than a supply driven approach". He illustrated his comments by reference to the remarkably successful MBA (Technology Management) program developed by APESMA and delivered through Deakin University; it began in 1988 and now has a 23% market share of all MBA students throughout Australia. Research for the Karpin Task Force found that approximately half of the frontline managers in Australia had no formal training for the roles and responsibilities which they undertake. Against this background the Task Force recommended a major national initiative for frontline managers. APESMA, which has become a registered provider within the VET system, has developed and will offer with the Australian Manufacturing Workers' Union on a face-to-face in-house basis in enterprises, and in addition on a distance learning basis, a certificate program for individuals who wish to acquire skills relevant to the frontline manager role. John Vines suggested that the involvement of the AMWU in the delivery of a national education and training program "reflects a likely development for other unions", given the need to broaden their offerings to meet the needs of their members. Such developments could have a significant impact on the VET system, not least because of their perspectives and the very large potential student numbers for programs which industry based unions may offer, on the opportunities for workers to participate in training, and on the future competitiveness of Australian enterprises.

In her paper, entitled "Industrial Relations and Vocational Education and Training in Australia", Jane Carnegie argues that historically there "has been a strong interconnection between industrial relations and vocational education and training in Australia, manifested by both wage fixation processes and the apprenticeship system", and that this interface is as important today as it has been in the past. She sets out to investigate whether, over the last decade or so, there has been "a substantial change in the structure of the relationship precipitated by significant reforms in both vocational education and industrial relations as a response to economic restructuring". Her conclusion is quite unambiguous: "at both a systemic and specific industry and enterprise level there has been a major change in the way that training and industrial relations intersect, driven by the reform processes of each system, the economic imperatives driving those reform processes and the approach to managing the reforms through the Labour years of office". For example, she notes that data collected recently by the Federal Department of Industrial Relations show the significance of training and training related structures to enterprise bargaining, the increasing importance of specific training provisions which relate to the Training Reform Agenda and the direct linkages between training, productivity increases and wages outcomes. Given the reforms proposed by the new Howard Government she argues that the parameters and the outcomes of the interrelationship may change again, although precisely how is not yet clear.

The final paper in this session of the Conference was given by Associate Professor Julian Teicher and Ms Aija Grauze and is concerned with enterprise bargaining, industrial relations and recent training reforms in Australia. Since relatively little is known about the nature and extent of the training arrangements which have been implemented within the framework of enterprise bargaining the authors explore the extent of training provisions in enterprise bargaining agreements (and changes in such provisions since enterprise bargaining began), present a demographic profile of those persons who are covered by agreements which include training provisions, and discuss the quality of training provisions which are included in the agreements they examined (and whether these differ across industries). Their research found that many workplace changes required training for their achievement and that this was

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sometimes reflected in enterprise agreements. More often, however, they found that agreements included a training provision (e.g. a commitment to training or to the establishment of a training program, consultation on training or training leave). They comment that "by and large, these commitments appear to have rested on the assumption that training will enhance enterprise productivity, though the data are equivocal on whether this expectation generally has been met". Teicher and Grauze suggest that the absence of detailed provisions mapping out the parameters and implications of a training program "cast doubt on whether the parties to the agreements seriously intended implementing training programs". They argued that, on one view, inclusion of training provisions and ancillary reference to career paths may be a concession to union negotiators. Alternatively, managers seeking to justify pay rises granted in enterprise negotiations "may have been able to report that training programs were being implemented to enhance productivity or improve quality". They expressed concern at "consistent indications that training is not central to the enterprise bargaining process", and further concern at "evidence that there is a considerable gap between the inclusion of training provisions and the conduct of training and enhancement of productivity". They conclude that further research at the enterprise level is required "to identify the extent to which training provisions are implemented in the workplace and how this differs between organisations that have specified training arrangements in their enterprise agreements from those that have not".

The final session of the Conference considered a range of issues considered earlier in the program or relevant to its theme. Professor Barry McGaw, Director of the Australian Council for Educational Research and a member of ANTA's Research Advisory Council, presented an overview of major issues and suggested various directions in which a research agenda for the economics of VET could be developed. This was followed by a panel discussion involving Professor Grubb, Dr Bertrand, Professor McGaw and Associate Professor Burke and questions and comments from the audience. Against this background Professor McGaw wrote the paper, "Developing a Future Research Program", which is included as the final chapter in this book. He argues that there are three considerations when establishing a research agenda: the broader context within which the research questions are framed and priorities identified, the importance of constructing the research agenda "in a way that makes connections between different elements", and the need to give careful thought, at the beginning, "to ways of maximising the impact of the research program". He strongly supports a strategy whereby "the lines of communication between policy makers, practitioners and researchers" are kept open so as to "facilitate a process of mutual education about each other's concerns". In considering the possible content of a research agenda in the economics of VET Professor McGaw argues that attention to at least five main issues is required: the benefits of VET, the role of VET in change, the cost-effectiveness of different forms of VET, the content of VET, and the beneficiaries of VET at the level of individuals, enterprises and society (using both cross-sectional and longitudinal data; and addressing both equity and efficiency objectives). He recognises, of course, that "it is unlikely that all, or even a substantial part, of such an agenda could be tackled in the near future with the resources currently available"; and suggests three possible responses. The first response is to structure and link the items in the research agenda so that "scarce research resources can serve multiple purposes". Another response is to build collaborative relationships with other groups of researchers, "especially those from other disciplines". The third response, which Professor McGaw suggests is perhaps the most important, is to "ensure that the research that is done has maximum impact". He advances a number of helpful suggestions as to how these three responses might be pursued effectively. It is perhaps of interest that ANTA's Research Advisory Council subsequently advertised nationally a research project to investigate the relationship between VET research and its impact on policy, practice and performance, that the competition was won by CEET, and that the Centre, in cooperation with the ANTARAC Research Centre at the University of Technology, Sydney will be undertaking the project in 1996-97.

OPENING ADDRESS

Peter LeP. Darvall
Deputy Vice-Chancellor
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Welcome to the Conference and its theme "The Economic Impact of Vocational Education and Training". A forum to discuss the connection between economics and education in general is long overdue. An examination of economics in the context of **vocational** education is therefore truly timely.

For the benefit of our visitors, this conference centre carries the name of Australia's first Prime Minister, the leader of the Protectionist Party, and minister responsible for the "White Australia" Immigration Restriction Act.

The present Prime Minister, The Honourable P.J. Keating, who is definitely not a protectionist, noted in "*Working Nation*" (The White Paper on Employment and Growth, May 1994, page 10):

> "We can make no better investment than in the skills of Australians. In the international marketplace, we depend on nothing so much as their ideas, skills and knowledge ..... employment opportunities for young people will be expanded by accelerating reforms in vocational education and training to produce a system which:
>
> - responds to industry concerns about the content and relevance of training, and which engages industry in determining the direction of training reform;
> - offers a variety of paths ..... which can be adapted to the needs of people at different stages in their working lives;
> - is based on a competitive market, consisting of both public and private training providers;
> - gives disadvantaged groups access to training, and
> - concerns itself with what individuals can do rather than how long they have been in the system.
>
> As part of its employment strategy, the government has set a target of 50,000 additional entry level places a year by 1995-96 ....."

This statement highlights the importance of vocational matters in today's economy.

It will not have escaped anyone's attention that recent years have seen major changes in the size, structure and objectives of Australian education. Gerald Burke (1995) has neatly summarised the principal changes which have occurred, in a paper he prepared earlier this year for the National Board of Employment, Education and Training, and I take the opportunity to paraphrase, plagiarise and expand on his observations now.

- Expanding the levels of education and training and the qualifications held by the work force. This expansion has included an increase in retention rates to year 12, from 58% in 1988 to about 75% in 1994. There has also been an expansion in higher education enrolments, which have increased by 39% in the period 1988-1994. Growth in vocational education and training was at first slow, but accelerated after the Finn report in 1991. The overall growth in TAFE enrolments in this period has been about 18%.

- Containing of the levels of public expenditure on education. Although there have been efforts to stem the flow from the public purse, it should be noted that total government outlays on education increased by 52% between 1987-88 and 1993-94 ($14.4 thousand million to $22.0 thousand million), which constitutes real growth of 23%.

  In higher education, there has been a considerable widening of the funding base, which has included full fees for overseas students and postgraduate fees and HECS (higher education contribution scheme) for Australian students. HECS comprised about 13% of 1993 income, and other types of student fees nearly 12%. Federal contributions were down to 56%. The balance was made up of State government funding (just over 4%), and other sources of income (15%).

- Reorienting education and training towards the needs of industry. This, of course, was one of the points made in *Working Nation*, which, among other things, sought reform by producing a system which would respond to industry concerns about the content and relevance of training.

  On the matter of training and the needs of industry, it is interesting to mention the survey a few years ago which noted the discrepancy between the aspirations of young people (from school years 10-12), and the actual distribution of jobs within the existing labour force. The survey observed that 56% of young people aspired to be professionals, yet only about 13% of the workforce are. 3% wanted to be clerks, yet 17% are. This could indicate that many people have unrealistic aspirations. Improved "dialogue" between the employers of labour, and the trainers and educators could serve to narrow this "aspiration gap".

- Improving the participation of less advantaged groups. The pattern of catering for pockets of disadvantage in our society is arguably further advanced in higher education than it is in other sectors. The principles of equity in higher education are enunciated in *A Fair Chance For All* (a government statement flowing out of the Dawkins White Paper), which laid out specific strategies for improving the participation of the six groups identified as "disadvantaged" in the context of higher education. Equity is one of the areas in which higher education is moving towards performance-based rewards, and universities successful in meeting agreed targets are now financially rewarded.

- Exposing education and training to market forces and reforming management within education. Again, I can speak with greater knowledge of the situation in higher education. Included here is the whole package of so called "Dawkins Reforms":

(i) educational profiles;
(ii) bidding for growth in numbers;
(iii) management plans for research and capital;
(iv) relative cost funding; and
(v) institutional amalgamations.

Many aspects of these reforms have had very positive outcomes; some aspects might have had a better outcome given a slightly different approach.

In light of these quite radical changes, it is of critical importance that there be more research in various aspects of education policy. One important cog in this machine is CEET – the Centre for the Economics of Education and Training, sponsors of this Conference, a body which I will say more about presently.

I am sure you will excuse a slight lapse into a Monash editorial. Just as *Working Nation* noted that "greatest of all these [resources] are the talents and energies of the Australian people" (p. 1), this view of the world has always been that seen by Monash University. In its strategic statement *Directions for the Future*, the Vice-Chancellor reiterated **the ten Monash values**. Five of these values relate directly to the university's "people". The other values relate to the community, enterprise, innovation/competitiveness/creativity, development and internationalisation.

Monash is proud of the ways it has maintained its diversity, and offered students multiple points of entry, open learning, distance education, articulation, credit transfer and special programs for the disadvantaged. Our experience demonstrates that there is no conflict between access and quality of outcomes. Certainly the move to make higher education a system of mass education sits well with the Monash philosophy. Monash has been a leader in diversifying its income base, and has always supported the notion of credit transfer, articulation from TAFE and equity.

Monash is also proud of its record in research. Monash is recognised as having particular research strengths as well as strengths in strategic basic research, such as that conducted through cooperative research centres. This brings me to the Centre for the Economics of Education and Training, which we could perhaps describe as a "CEET of learning".

In its short life, CEET has been incredibly vigorous. It has won large research grants, it has produced a great deal of empirical research on all aspects of vocational education and training (VET), and it has a long list of publications, research seminars and workshops. From Monash University's perspective, CEET represents a concrete example of the synergy which can be generated by collaborating with another organisation, in this case, the Australian Council for Educational Research.

I will spend just a couple of minutes on CEET's history. The Centre was established as the Centre for the Economics of Education in 1992 by Monash University with the cooperation of the ACER. It was to serve as a focus for the research, teaching and formulation of policy advice in the economics and finance of education and training.

It began life with assistance from the Monash University Development Fund (a Monash initiative which has spawned many successful centres), and it aimed ultimately to be self funding. In 1992, it was successful in obtaining a grant from the Australian Research Council to support a critical review of the economics of education in Australian education policy. This led in part to the publication in 1993 of *The Economics of Education 1992*, and to the development of a review of the Australian literature on the economics of vocational education and training. During 1993 and 1994, work on this review was also supported with a grant from the Australian National Training Authority. The Centre has also received funding from DEET via its evaluations and investigations program, and has undertaken projection and modelling exercises with Monash's Centre for Population and Urban Research, and the Centre for Policy Studies.

The Centre acquired its present name "The Monash University–ACER Centre for the Economics of Education and Training" late in 1994. Its directors are drawn from Monash and the ACER, (although I note that Leo Maglen, formerly of Monash University, has decided on the "soft option", and has now moved to a Chair at The University of Melbourne)! I have the honour to be on the Centre's Advisory Board.

This brings us to the Conference itself. I expressed earlier my belief that the link between economics and education in general was an important one. I quoted from no authority less than our Prime Minister, that vocational education and training were an important part of Australia's social, industrial and economic future. The Conference has drawn together a group of experts in aspects of VET, which covers experience across Australia and the world. Dr Olivier Bertrand from the OECD, and Professor Norton Grubb from the University of California at Berkeley where I once had the privilege to be a visiting professor, will provide details of the situation in Europe and the United States respectively. Professor Henry Ergas, formerly of Monash and now of Harvard University joins us again, to discuss structural change in Australian industry. Professor Leo Maglen will examine VET in the global context with Dr Chandra Shah. The Conference program covers aspects of private provision of VET, VET in Australian enterprises, and other presentations will provide the widest possible coverage of the issues. Dr Barry McGaw, Director of ACER will provide an overview of major issues, which will no doubt lead to the setting out of a future research agenda in this important area of education and training. My apologies for not mentioning more of those presenting.

To date there has been relatively little literature explicitly directed to research on the economics of VET. As this Conference covers a number of key areas of the topic, the papers presented over the next couple of days will add significantly to the literature, and provide impetus for future research.

I have to say that I do have one serious concern with the Conference, and this relates to the "happy hour", which on my copy of the program is scheduled for 4.10 to 5.00 p.m. tomorrow. I'm not sure if this short hour has something to do with the conference organisers spiking the house punch, or if it's some insidious side-effect of enterprise bargaining. In either case, I recommend caution.

References

Burke, Gerald 1995. *Dimensions of Education and Training in Australia from 1988*, NBEET, Canberra.

Dawkins, J.S. 1988. *Higher Education: A Policy Statement (The White Paper)*, AGPS, Canberra.

DEET (Department of Employment, Education and Training). *A Fair Chance for All*, AGPS, Canberra.

Keating, P.J. 1994. *Working Nation: The White Paper on Employment and Growth*, AGPS, Canberra.

Monash University 1995. *Directions for the Future*.

TRENDS AND ISSUES IN VOCATIONAL EDUCATION AND TRAINING: A PERSPECTIVE FROM EUROPE

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Introduction

This paper attempts to highlight the main trends which have affected vocational and training (VET) systems in European countries during the last two decades. It assists comparisons with recent developments in Australia and in the United States, which are discussed in the other contributions. However, the paper could not fully account for the wide diversity of situations in Europe.

1. Diversity of Contexts and Common Challenges

1.1 The Diversity of Situations in Europe

Any analysis of trends and issues in Europe is faced with the wide diversity of historical developments and of institutions which can be observed between European countries. This diversity is particularly striking in the area of vocational education and training, which is closely related to the overall educational system, to the functioning of labour markets and to the pattern of industrial relations. The picture would be even more complex if Central and Eastern European countries were to be taken into account, but this paper is focussed on industrially advanced Western European countries.

In view of this diversity, it is difficult to talk about Europe in general and to identify characteristics which would be specific of Europe as a whole. It would seem that the major difference is not so much between Europe and the rest of the World, but rather between continental Europe on the one hand and the United Kingdom and some of the English-speaking countries on the other. It might be said that the specificity of Continental European countries would consist in the fact that in all of them there exists a national and institutionalised system of vocational education and training, which is not the case in the UK and in many other industrialised countries outside Europe.

In his report of the OECD Conference which concluded the VOTEC activity[1], David Soskice suggested a typology which is summarised below, opposing more particularly Northern Europe and what he called the Anglo-Saxon economies.

[1] VOTEC refers here to a series of analyses and of discussions undertaken at the initiative of OECD on "The New Role of Technical Education and of Vocational Training". The results of this activity, which involved more than twenty OECD countries, have been used extensively in this paper (OECD 1996b).

Characteristics	Anglo-Saxon Economies	Northern Europe
Balance of general and vocational	Emphasis on general education	Strong vocational training systems
Certification	"Market" plays large role	Based on industry consensus
Customisation	Emphasis on modularity	Well-defined long-term courses; less possibility of individual modification
Entry requirements	Less important	Clear requirements
Subsequent employment possibilities	Relatively wide range of employment opportunities	Well-defined "good" possibilities, but in narrowed area
Company involvement and location of training	Largely in public and private colleges; weak company commitments	Strong company involvement; much company-based training
Institutions Outside Vocational Training:		
Labour markets and industrial relations	Generally weak unions; de-regulated labour markets	Unions play cooperative role

This model applies more particularly to the German-speaking countries and to a lesser degree to Southern European countries. In the latter (and in several Scandinavian countries), the main responsibility typically belonged, not to enterprises, but to vocational schools under State control with a centralised system of management. In some of these countries, teaching tended to be academic and the relationship with enterprises and with the labour market to be loose; this did not facilitate subsequent employment opportunities.

Of course, any typology is an over-simplification of a diverse reality. Additional dimensions could be added to the typology, such as the type of management (centralised or decentralised) or the stage of differentiation between the academic and the vocational streams (early differentiation in German-speaking countries, late differentiation in the Scandinavian countries). In any case, the concrete situation of a particular country hardly corresponds to the "pure" model. Furthermore, countries are changing and may be drifting from the original model, so that confusion may arise between the original model and the present situation. We shall come back to this issue after reviewing the recent trends.

If models are inadequate to identify concrete situations, they may help to look at vocational education and training in a systemic way: they emphasise the relationship between the various characteristics of the VET system and the educational, institutional and social context. Thus, they may contribute to explain why some policies may be successful in one context and not in another one and to throw some light on the difficulties of transferring foreign experiences.

1.2 Common Constraints

Despite this diversity of social, cultural and institutional contexts, all European countries have been faced during the last decades with the same constraints, which are increasingly international and therefore in most cases not specific to Europe.

(a) First of all, VET systems are expected to meet new requirements, which result from the combination of three interrelated factors:

- the worldwide diffusion of information technologies, which affects the products as well as the work processes;
- economic competition, which tends to be increasingly international and which requires more efficiency, more quality and more innovation and diversification of products and services. As a result, European economies have had to concentrate on high-value added products and have increasingly been based on services, leaving the mass production of low-cost goods to other countries where wages are comparatively low ;
- changes in work organisation, away from the traditionally rigid and fragmented Taylorian approach.

As a result, there is a demand for a more skilled labour force, with more autonomous, adaptable and polyvalent workers. The concept of competence tends to prevail over the more traditional notion of skills, as employers tend to put more emphasis on the overall competence of individuals, and especially on their ability to communicate, to solve problems and to work in teams, rather than on their purely technical skills. The major challenge is not so much to train the workers for the utilisation of new technologies, but rather for doing the kinds of work that the technology cannot perform, i.e. those which require adaptability, creativeness and a human relationship.

(b) The rise of service activities has in most cases not been sufficient to limit the growth of unemployment, which tends to be a structural feature, in Europe even more than in other industrialised countries. As young people are often particularly affected, it becomes sometimes difficult to differentiate policies aiming at promoting employment, training and the transition from school to work.

(c) These policies generally imply large-scale Government programs, which are expensive. But at the same time Government resources tend to be increasingly constrained: the global economic competition is intensified and may have contributed to some extent to a slower growth rate. Consequently (and also because of the resistance of taxpayers), it becomes difficult to face the growing demands resulting from the increased participation in education and from the need for a more skilled workforce. Hence, there is pressure for a more efficient and if possible more cost-saving VET system.

2. Major Trends

One of the main issues underlying this paper is whether the recent trends summarised above have entailed a convergence between European countries or whether they have kept or even reinforced their specific characteristics, resulting from their history and their culture. On the basis of the country reports prepared in connection with the OECD VOTEC activity (and also of Gordon et al 1994), it is possible to identify a number of common trends – which in many cases are not specific to European countries – but also in some areas diverging policies inspired by these specific traditions. These trends will be illustrated by examples taken from various countries belonging to the "models" identified above.

Two key words are used almost universally to describe the new policy orientations: VET systems are expected to become more **responsive** to the new demands of the economy and of the society, and more **flexible** to react quickly to these demands, which tend to be unforeseeable and increasingly diversified. It may be assumed that these new orientations are more challenging for the institutionalised systems of continental European countries, an issue which will be further discussed at a later stage. These orientations underlie most of the developments described below, but this description also shows that responsiveness and flexibility can be achieved in a variety of ways.

2.1 Linkages Between VET and General Education in a Context of Increased Participation

A considerable growth of participation in post-compulsory education has taken place in European countries during the last decades – somewhat later than in the United States and in Japan. It can be interpreted to some extent as a response to the demand of the economy for a more skilled workforce. But it seems to be even more the result of "supply side considerations". The lack of sufficient job opportunities has encouraged students to stay longer in the education and training system and seek higher qualifications to improve their "employability" (Gordon et al 1994).

Increased participation has resulted from the converging influence of the various players in the game: employers, trade unions, young people, Governments, schools and teachers. Each one has had – at least until recently – its own reasons for favouring an increased participation. A major role is played by the young people who make the main decision.

For quite a long time, the United Kingdom has been an exception to this tendency, "since post-compulsory education was mainly a preparation for higher education, while the employment situation and pay scales encouraged young people to go straight into the labour market" (OECD 1996b). This is now changing, partly as a result of a policy to encourage young people to stay longer at school.

Statistics indicate that in most European countries increased participation has benefited primarily the academic type of education, despite Government efforts to develop the vocational streams (e.g. in Italy and more particularly in France). There are only two countries (Denmark and the Netherlands) where increased participation has benefited mostly the vocational streams.

The "resurgence of interest in the vocational dimension of education", which has sometimes been called "new vocationalism" (Skilbeck et al 1994), applies mostly to the United Kingdom, which, as we have seen earlier, belonged to a different "model" where there was hardly any institutionalised system of vocational education and training.

Several explanations might be suggested for the fact that, despite a demand by the labour market for a better trained workforce, vocational streams have developed less than academic education. One explanation could be the shift towards tertiary jobs, for which it might be argued that a general education is more appropriate. Another one could be the higher cost of vocational education. But the most decisive factor is probably the fact that in most countries "the VET provision is seen as a second choice to post-secondary general education. The attempt to put VET on a par with general education is referred to as parity of esteem: that holy grail of VET, actively sought but never achieved" (Gordon et al 1994).

This attempt has taken different forms in the countries following the various "models". In the United Kingdom for instance, it is hoped that more integration between academic and vocational education, through the introduction of various streams and crossover points will help to improve the image of VET.

Other policies could be observed, for instance in Sweden, where the parity of esteem was to be achieved by merging the various kinds of institutions and by increasing the general studies content in vocational streams. In France, the creation of a "vocational baccalaureate" was expected to provide opportunities for a continuation of vocational studies and for better jobs. But a notable proportion of diploma-holders attempt – with little success – to enter some kind of higher or post-secondary studies.

Even in Germany, there is now a tendency for a growing proportion of young people either to enter apprenticeship at a later stage (after the "Abitur") or to return to the university after completion of apprenticeship, which entails a very long duration of studies. In order to avoid this situation and to open more opportunities for those who have followed the vocational stream, it is now envisaged to facilitate their access to higher education.

Nevertheless, Germany strongly maintains the principle of a division between the vocational and the academic stream at an early stage. It is "seen as the best way to avoiding the downgrading of apprenticeship by allowing each stream to define its own objectives and offer more varied possibilities of advancement to young people with different abilities" (CEREQ/OECD 1994). The prestige traditionally enjoyed by apprenticeship under the "dual system" can be partly explained by the fact that it is the "normal" track, followed by a majority of young people, a situation which contrasts with that of most countries, where it is left to a minority resulting from a negative selection of the less bright pupils.

The concern for opening opportunities to diploma-holders from vocational streams is shared by other countries. It would imply that admission criteria are less focussed on an academic approach. The problem also applies to adults willing to study again and for whom it is desirable to develop approaches for the recognition of prior learning.

In any case, it would seem that the preservation of vocational streams at the secondary level is a distinct feature of European countries as a whole, compared to those of North America and of Australia. But most of them have developed at the same time post-secondary technical and vocational programs (of two or three-year duration) which are intended to train the technicians needed by the labour market, while diverting a notable proportion of school leavers from the traditional type of higher education.

2.2 Linkages Between VET and the Labour Market

Improving the responsiveness of VET systems to the changing requirements of the labour market raises two different issues: the participation of employers – or of social partners – in the assessment of training needs and objectives, and the contribution of enterprises to the delivery of training.

(a) Participation of social partners in the assessment of training needs and objectives

Involving the employers in the assessment of the rapidly changing requirements of the labour market looks like an obvious answer to the need for more responsiveness of the VET systems. Involving workers' representatives should contribute to the recognition of qualifications on the labour market.

In practice, however, it has to be recognised that most individual enterprises have only a short-term view of their future and find it difficult to translate it in terms of skill and training requirements. They often tend to interpret their requirements in a narrow way, especially when they are afraid of their trained personnel being "poached" by competitors. The employers' organisations themselves may have different views, depending on the size of the firms that they represent and on the type of industry. Furthermore, their representatives within the organisations are not necessarily the best informed about the latest developments in the workplace.

As for workers' representatives, their competence and their availability depend largely upon the strength of the labour movement.

The solutions adopted by European countries to these problems are related to their social context and to the type of management of the VET systems. In Germany, the elaboration of training regulations is a complex process which was agreed upon in 1979. It is based on two principles:

- the so-called "consensus principle", whereby the competent federal ministry issues a training regulation only following agreement by the social partners;
- the participation of experts (from industry, associations, the school system, etc.) (OECD 1994a).

The Federal Institute of Vocational Training (BIBB) leads the whole process, from the assessment of needs to the drafting of training regulations. This process may require difficult and sometimes lengthy negotiations, but it is a decisive contribution to the recognition by the labour market of vocational diplomas and to their social prestige.

In France, proposals for the creation, abolition or alteration of vocational diplomas are submitted to consultative bodies on which the Ministry of Education, employers and trade unions are represented. They are assisted in the assessment of labour market needs by a technical agency, CEREQ, which is under the responsibility of both the Ministry of Education and the Ministry of Labour. Unlike in Germany, this is only a consultative process and the final decision belongs to the Ministry of Education, which drafts the curricula and the examination requirements. But the point of view of employers' organisations weighs heavily in the identification of training needs and of overall objectives.

A rather similar situation tends to prevail, with a more or less formal procedure, in most other European countries: recently in the Netherlands and in Belgium, and more traditionally in the Scandinavian countries, where the involvement of social partners, including the trade unions, is a constant principle.

It is different in the United Kingdom, where a variety of solutions have been experimented with at different periods: coordinating agencies at the industry level (Industrial Training Boards) and at the national level (Manpower Services Commission) have now been replaced at the local level by Training Enterprise Councils, where employers' representatives play a major role. They also have the main responsibility in the Lead Bodies which are in charge of the design of the National Vocational Qualifications, which will be further discussed below.

As a whole, it may be said that European countries have made some progress in the organisation of a systematic and permanent dialogue between the educational system and the social partners. It is an important contribution to better responsiveness by the system, although limitations may remain, especially in view of the inadequacy of forecasting methods and of the time-lag usually required of the educational systems.

(b) The role of enterprises in the delivery of training

Apprenticeship has existed in most European countries for a long time, but it was usually restricted to the traditional trades and sometimes to the simple acquisition of practical know-how. Therefore, it offered only limited prospects to a decreasing number of less able and socially disadvantaged young people. At the same time, school-based systems of vocational education offering a wider range of opportunities were developed in most countries. The German-speaking countries remained the exception, with the institutionalisation of the dual system which includes a school component together

with the in-company training. In Germany, the legislation passed to this effect in 1969 was only a confirmation of earlier practice.

A new interest for this system and for various forms of alternating school-based and enterprise-based training has developed recently (CEREQ/OECD 1994). Involving more directly the enterprise in the delivery of training is now perceived as another way to ensure its responsiveness to the conditions prevailing in the workplace, but also to improve the efficiency of training (through a better integration of theory and practice) and to facilitate the transition from school to work (CEREQ/OECD 1994).

A number of European countries are now attempting to give a new impetus to apprenticeship. In France, for instance, Government policies are aiming at rising its economic profitability for enterprises through financial incentives and upgrading its prestige by making it possible to prepare in this way for the whole range of vocational diplomas, including at the post-secondary level. This country (and a number of others, such as Belgium, the Netherlands and Sweden) has also introduced a period of work experience in all vocational courses, especially for the preparation of the new "vocational baccalaureate".

Although these developments are generally seen as positive, they are faced with a number of limitations. The most obvious one is the availability of training places within enterprises, which is related to the economic situation and to the perception by enterprises of the costs and of the benefits involved in recruiting apprentices and in receiving students for a shorter period. This has contributed to the fact that the impact of new policies to develop apprenticeship has remained limited in most cases, outside the German-speaking countries.

There is always a risk that, for some employers at least, apprenticeship is perceived primarily as a source of cheap labour. The most positive approach was followed up to now by the German employers' organisations, which traditionally conceived training as a long-term investment for industry as a whole. The fact that even small enterprises are strongly organised in Germany has also contributed to promoting a positive attitude towards training.

As underlined by the work undertaken by OECD in the framework of the VOTEC activity (CEREQ/OECD 1994) an assessment of the various experiences with alternating training and of its chances of future development should follow a global approach. Some of the above remarks suggest that the social image of this type of training, its support and recognition by industry are related to the degree of involvement of social partners and to the type of labour market that prevails in a given country. A number of other countries are interested in the German example, but they may find it difficult to transfer the model in a different context, where these conditions are not fulfilled.

2.3 The Management of VET Systems

In most countries of continental Europe, where school-based VET prevailed and where the State was playing a dominant role, there was a tradition of strong centralisation – especially in France and in Southern European countries, but also to some extent in certain Scandinavian countries. On the other hand, a tradition of decentralisation has always existed in the United Kingdom, and even more in Switzerland, which is a federal State.

During the last decades, policies followed by these countries have been converging to some extent, so that the distance between the extreme situations has been somewhat reduced.

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(a) In the most centralised countries, a trend towards decentralisation has been initiated for several reasons. It was in some instances a way to satisfy a demand by the provinces to gain (or to regain) more autonomy, it was then part of a broader political trend. At the same time, in an implicit or explicit way, it was also seen as one way to tackle the issue of the financial constraints. As the global resources of the central budget were increasingly inadequate, it was felt that regional or provincial authorities could raise more money to satisfy local demands for more education and training. Finally, some degree of decentralisation was seen as one of the ways to achieve flexibility and responsiveness of VET systems: regional or provincial authorities being nearer to the enterprises, the labour markets and the people would be in a better position to adapt the VET systems to the economic and social demands. At the same time, more decentralised systems would be less rigid and could react more easily.

This broad trend can be illustrated by quite different examples:

- in Italy, the responsibility for the training of the workforce in accordance with the needs of the labour market was transferred to the provinces. They have developed entirely new systems, parallel or complementary vis-a-vis the State system of vocational education, which was maintained but reformed;

- in France, during the first stage of the process, it is the responsibility for the construction and equipment of school facilities which was decentralised, while the central Ministry of Education maintained its authority over teaching contents, teachers' recruitment and management and school organisation. At a later stage, the regions have been given the authority over policies concerning the training of adults and of young people after they have left school;

- several Scandinavian countries went further, by leaving a considerable amount of autonomy to the local authorities and to the schools, not only for the management, but also for the adaptation of the curriculum to specific demands of enterprises and the students;

- finally, a particular situation is that of Belgium, which became a federal State in 1989, with various degrees of autonomy left to local councils in the three communities.

The motivations for these moves were not the same: in Belgium it was clearly a political decision; in France the financial considerations have been taken into account, as well as flexibility issues; in the Scandinavian countries the concern was rather for a more democratic type of education, which would satisfy the wide diversity of individual demands.

(b) A tradition of decentralisation has always existed in the United Kingdom. As indicated above in connection with the setting up of training objectives, policies followed during the last decades have gone in opposite directions. After various attempts at the creation of central coordinating agencies, the latest developments have favoured decentralisation at the local level with the creation of the T E C. At the same time, the need for national standards has been recognised. As a result, a process of definition of National Vocational Qualifications has been initiated in a very centralised way (see below).

Outside Europe, a similar concern for national standards could also be observed in North America and in Australia, where the traditions of federalism or of decentralisation are strongly established. In other words, the pendulum seems to be switching between the most extreme situations, as many countries are still looking for a proper balance in the distribution of power between the central, regional (or State) and local levels and give more or less priority to the principles of flexibility, of responsiveness to the demands of industry and of the individuals, of efficiency and of equity. (These issues will be further discussed below).

2.4 Flexibility and the Changing Structures and Contents of VET Systems

European countries, like other OECD member States, have attempted to give more flexibility to their VET systems, not only in terms of management, but also by changing their structures and their contents.

Part of the work undertaken at the initiative of OECD in the framework of the VOTEC activity has been focussed on the concept of pathways, in order to emphasise a dynamic approach by the VET systems and the role of individual choices at different stages in the participation to various types of education and training. In order to satisfy individual demands even more than those of the labour markets, most countries have tended to increase the flexibility of these pathways through diversification and the creation of bridges between types of education and of training. In particular, "the development of post-secondary technical education makes it possible for those who have completed vocational studies at the secondary level to continue their studies, which was almost impossible in most countries until recently" (OECD 1996b).

One example is the experiment conducted in Finland, where partnerships between general and vocational education institutions enable students to take certain courses in a second institution and to choose a wider range of subjects and streams. This is again conceived as a democratic way to satisfy a diversified individual demand, but it implies a high degree of cooperation between the schools and a more complex organisation.

A more broad-based training is now considered necessary, as another element of flexibility, from the point of view of the students and of the demands from the labour market. These demands are rapidly changing and often unpredictable. A broader understanding of their technical, economic and human environment is required of the workers, who are also expected to be more mobile and more adaptable. Broadening the students' basic knowledge is seen as a necessary foundation for their vocational training (e.g. in Denmark) and as a means to make their skills more readily transferable (OECD 1996b).

In Germany, the dual system is aiming at the development of "key qualifications" (such as the ability to solve problems), while in the United Kingdom several projects have been focussed on the development of "core skills" (Skilbeck et al 1994) – an approach which has also been followed in a few other European countries and in North America (OECD 1996b).

At the same time, the number of specialised streams in vocational education has been drastically reduced in most countries. The number of recognised specialties in the dual system has fallen from 900 in 1945 to 377 in 1990 in Germany and from 300 to 80 in Denmark with the 1991 reforms. A limited number (around 20) of basic groups have been established in Finland and Sweden.

While specialisation is now progressive in the most important training areas (metalwork) in Germany, the principle of modularity has been adopted in the United Kingdom as a major element of flexibility. It is applied in connection with the development of National Vocational Qualifications (below).

2.5 Policies Aimed at Low Achievers

As mentioned earlier, a number of European countries have been faced with a very high level of what appears now as structural unemployment. Young people have been particularly affected, especially those who had left school without an adequate level of qualification. With a rising level of skills and more demanding employers, labour markets leave very limited prospects for this type of population. The problem becomes even more difficult when it is correlated with social disintegration and the loss of traditional values. This is probably the major challenge faced today by educational systems, which do not have the resources and the experience required to give the individual support which may be required

to potential drop outs. Indeed, the problem is not so much one of vocational training; it is a broad educational and social issue. But VET systems are more affected because they are often required to meet the shortcomings of the regular schools and because they tend to receive most of the population at risk.

Programs launched by Governments and intended primarily for the less educated young people were initially conceived as transitory, but tend to become permanent with the persistence of these difficulties. In many cases, these programs have provided an opportunity to experiment with alternative methods of remedial education and training. But their implementation has also been revealing of more fundamental problems of social integration and of the inability of traditional educational systems to cope with these problems.

2.6 The Development of Continuing Training

Another element of responsiveness has been the development of continuing training. It is not specific to European countries, but they have been even more concerned for two reasons: the comparatively higher level of unemployment has required large-scale re-training programs for unemployed people; and in many of these countries, the demographic trend has implied a reduction in the number of young people arriving on the labour market, so that the renewal of skills had to be achieved mostly through the re-training of adult workers.

This development of continuing training calls for two types of comments concerning the economic and financial aspects on the one hand and the problems of assessment and certification on the other.

Concerning the economic and financial aspects, an interesting experience is that of France. According to legislation passed in 1971, enterprises are obliged to spend a percentage of their payroll, either for the training of their own personnel, or by payments to Mutual Funds jointly managed by representatives from employers and from trade unions, who re-distribute the resources for training purposes. After more than twenty years, it appears that the average level of expenditure is much higher than the legal obligation, especially among the larger firms, while the amounts directly spent for training by the smaller ones remain very limited. These developments are considered positive as a whole and seem to reflect an increased awareness of the role of training as an investment and as an integrated part of the overall strategy of the larger firms.

However, there is still some controversy about the real impact of the legislation, which was sometimes perceived at the beginning as another fiscal constraint, but which may have contributed to initiate the process. The management of the resources by the Mutual Funds has also come under criticism, particularly because of the complexity of the system, the excessive number of bodies and the lack of transparency of their management (which in some instances has been too much related to vested interests). This has led to recent measures aiming at re-structuring and at a simplification of the system (Bertrand 1996).

In addition, there is also a variety of incentives, such as the agreements between enterprises and the State, whereby the latter agrees to share the additional expenditure by enterprises for the training of their own staff, with specific priorities (e.g. long-term unemployed, unskilled workers).

Whereas in France it was deemed necessary to enact legislation to stimulate spending by enterprises, or even to force them, in Germany employers have always resisted any interference by the State in the financing, whether it is for initial or for continuing training. They prefer to keep the full responsibility for the financing, which goes together with their major role in the regulation and in the management of the system.

In the U K , a major element of the policies aiming at the promotion of continuing training has been the development of National Vocational Qualifications, which is part of the new concern for assessment and certification and which is discussed further below.

In most other countries, there has also been a development of continuing training, but it has proceeded in a more spontaneous and less institutional way, which implies that the amount of information available is also more limited.

2.7 The Concern for Quality, Assessment and Certification

The expansion of VET, the diversification of providers and the new financial constraints have contributed to increasing the concern for the quality of training and for the methods of assessment.

Two recent developments are worth mentioning here. The first one is related to the emphasis on flexibility and to the development of continuing training. In a number of countries, it is now felt that the traditional forms of assessment are too restrictive and tend to favour an academic approach to training. The need for a recognition and an assessment of prior learning tends to be generally accepted. But in most cases, it has remained at the level of research and experimentation and has not been implemented on a large scale.

The second development, initiated in the United Kingdom, was the adoption of National Vocational Qualifications. It is hardly necessary to recall the objectives (provide incentives for the upgrading of the workforce and the recognition of its skills, meet the need for a better adaptation of training to the requirements of industry and for national standards, involving a clarification of the certification system) and the underlying principles of this undertaking (diversification of assessment procedures, based on the demonstration of the ability to perform tasks, modularity).

This development is particularly important, since the British model has been followed (with some variations) in other English-speaking countries, and has been proposed as a model for the European Union and for Central and Eastern European countries. However, it has raised some controversy. While no one seems to argue about the need for more clearly identified and recognised national qualifications related to the needs of the labour market, several aspects are still under discussion:

- is the ability to demonstrate a competency sufficient to prove the type of broad understanding which is increasingly required of the workers? Is the addition of small and apparently fragmented units sufficient to constitute an educational approach?;
- while a broader approach to assessment is desirable, is it organised in such a way as to guarantee an adequate level of homogeneity and of quality?; and
- to what extent are the employers committed to the approach, or what could be done to increase their involvement?

3. Issues Raised by Recent Developments in Europe and in Australia

This brief review of European trends raises a few general questions for Europe, but may also be related to the recent developments in Australia.

3.1 Issues Raised by European Trends

(a) After reviewing the European trends, it may be worthwhile to look back at the typology suggested at the beginning and at the respective position of various countries with regard to this typology. It appears that as a whole the differences remain, but in some instances they tend to be blurred:

- the relative emphasis on vocational education remains different, but there has been a new interest concerning the issue in the United Kingdom, while the relative weight of vocational education has tended to decrease in most other countries;

- the development of national standards in the UK reduces the difference with other countries from the point of view of certification;

- a number of countries are trying to open more customisation possibilities, but modularity remains a more fundamental principle in the UK;

- a number of countries in continental Europe are inspired by the German model and are attempting to further involve companies and to develop alternate training, but fundamental differences remain between the initial systems; and

- the characteristics of the labour markets and the role of unions remain different.

Concerning the other criteria, there is some degree of convergence with regard to the stage of differentiation between general and vocational streams (as a result of the tendency to stay longer at school) and with regard to the management of the VET systems (as a result of the increased decentralisation in several countries).

(b) A second set of issues is related to the concept of professionalism. According to some German experts (for example Burkhardt Lutz, in CEREQ/OECD 1994): (i) the competitiveness of the European economy depends to a large extent on its industrial workers and on the new range of skills required of them; (ii) the best way to acquire and to maintain these skills is through a major role for enterprises in the definition of training programs and in the delivery of training; and (iii) it implies the strengthening of professional labour markets which recognise and value the corresponding qualifications.

These experts are urging the preservation of this approach and of a strong VET system in German-speaking countries and, if possible, in other countries, which are themselves often looking at it as a desirable model. But they sometimes tend to under-estimate the role of the overall institutional and social context and the difficulties of transfering the German model to a different context. At the same time, there are signs that even in Germany some of the large enterprises are contemplating alternative approaches to labour management, which would mean recruiting on the external labour market people with a higher level of general education.

The future will depend to a large extent on the policies followed by employers in this respect. Whether the alternative choice in favour of a higher level of general education would fill the need for intermediate qualifications, or would contribute to an increased polarisation and jeopardise the foundations of industrialisation is an open question.

(c) A third set of issues, which is not specific to European countries, concerns the implications of the new emphasis on flexibility, on responsiveness and on decentralisation. It raises several questions. For instance, to what extent should flexibility and responsiveness be conceived only in relation to the short-term needs of the labour market? Or should they – and can they – take into account longer-term economic requirements and the needs of the society at large, with a concern for equity between groups of the population or between regions? To what extent is such a concern compatible with decentralisation on the one hand and with policies aiming at the satisfaction of a diversity of individual demands on the other?

In other words, what kind of regulation could counterbalance the new emphasis on flexibility and responsiveness at a time when the traditional concept of central planning is apparently obsolete? Regulation can be achieved in a variety of ways, which are related to the initial models: emphasis can be put on the negotiation between the actors, particularly the social partners, or on the overall guidance by the State (which should keep this role while leaving the detailed implementation to other authorities when there is a policy of decentralisation), or simply on incentives.

In any case, as suggested above, it is important to maintain a systemic approach, in order to ensure that there is enough consistency between policies concerning the VET system, the educational system as a whole and the labour market. In this connection, the question arises of whether a policy of complete de-regulation of the labour market is compatible with the establishment of strict national standards of certification.

(d) A final set of issues results from the progressive construction of the European Union. To what extent is it necessary and possible to adopt common policies, instruments or devices in the area of education and training for all Member States, in view of the diversity of national contexts? Education was not included as such in the agreements which established the European Union, but they stated the principle of the free circulation of workers and were concerned about the efficient operation of the labour markets.

This has led to several agreements on the principle of mutual recognition of educational qualifications at the post-secondary level for regulated occupations and to a common definition of levels of qualifications. But attempts to set up a European system for comparability of qualifications through common definitions of occupations were faced with various problems: the process was cumbersome; it was difficult to account for the diversity of national systems of work organisation, of identification of occupations and of vocational education and training; and the usefulness of the system was limited since workers' mobility between countries tended to diminish rather than to increase (OECD 1996a).

Recent trends at the European level are now oriented towards transparency rather than the definition of uniform systems ; towards finding new ways for the recognition of prior learning and for the accounting of work experience; and towards the identification of common broad policies for the strengthening of vocational education and training (European Commission 1996).

3.2. Recent Developments in Australia from a European Perspective

Recent developments in Australia could be seen against the background of these European trends, it being understood that Europe is not necessarily the main reference to-day for a country which has been looking increasingly to America and now to the Far East. As a result, the Australian VET system now stands in an intermediate position with regard to the "models" outlined at the beginning of this paper.

The recent progress of participation in secondary education seems to have been even more rapid in Australia than in continental Europe, with a major difference due to the non-existence of a distinct vocational stream at the secondary level. Together with the awareness of the need for a more skilled labour force as a major element of economic competitiveness, this situation has induced Government policies aiming at the promotion of vocational education and training: the Training Reform Agenda.

This is obviously not the place to assess these policies, whose implementation has begun only recently, but looking at them in relation to the above outline of the European context may suggest a few questions and remarks.

(a) The first set of questions refers to the relationship between developments in vocational education and training and the labour market.

- The percentage of an age-group completing high school in Australia is now higher than in most European countries (around 80 per cent) and most of the vocational education takes place only afterwards, in the TAFE system. The fact that all of them will not find jobs in managerial or intermediate occupations does not seem to be perceived as a problem and there is apparently no concern for the risk of over-education. Is it because no clear relationship is established in the mind of the people or in the classification systems, between a level of education and a type of occupation? To what extent is it possible to compare this situation to that of the United States? It clearly contrasts with the situation in France for instance, where reaching a similar level of educational attainment around the year 2000 has been envisaged as an objective which has already given rise to controversy.

- to what extent is it possible to apply to the present Australian context the concept of a skilled worker which prevails for instance in Germany and the emphasis put on the need for "a new professionalism"? Is it expected that the need for such profiles could be satisfied by the introduction of vocational courses at the secondary level or by the development of TAFE programs at the post-secondary level or by in-company training? Or is it felt that such profiles do not correspond to the specific needs of the Australian economy?

- similar questions could be raised with regard to the training of technicians. Their role is now conceived as fundamental in Europe, where they are typically trained in post-secondary technical programs of two to three year duration, combining general education, basic technological courses and more vocational training, whereas TAFE colleges seem to be more focussed on specific vocational courses.

(b) Another set of questions concerns the new emphasis on national standards, which may be seen from two points of view: the issue of centralisation compared to decentralisation, and the problems raised by the competency-based approach.

As a recent nation with a deeply-rooted federal tradition, the problem for Australia is not so much the decentralisation of management (attempted by many European countries), but rather the need for national standards, which other federal countries are beginning to feel. Considering that workers' mobility between the States is already a reality and should be facilitated and that there is much more homogeneity between them than between European countries, establishing common standards should prove to be much easier. Further comparisons between the Australian experiences and recent attempts in the same direction in the US might be interesting.

Since the competency-based approach of national qualifications is now being promoted or under consideration in a number of countries, comparing the Australian experience with others, especially the UK, might be of particular interest. It is understood, however, that this experience is new and evolving and that there are significant differences between the approaches followed in the two countries.

In Australia, the trade unions have played a major role in initiating the process and in its implementation. It means that standards have more impact on the labour market and especially on wages, but also that they are to a larger extent the reflection of the existing work organisation. The relationship with wages may also explain the number of levels, which is higher than in other countries, and may be a source of additional fragmentation of units.

A wider range of actors have been involved in the process, including in the educational sector, which allowed for the translation of units of competency into curricula. It may have contributed to a wider educational approach to competency standards.

Finally, their adoption in the school context has been different, since it is essentially the TAFE institutions which have been concerned with the process in Australia.

(e) A third set of questions concerns the economic and financial aspects of training. Compared to the continental European countries, Australia seems to put more emphasis on an increased training effort by enterprises. This implies a serious change in their attitudes, considering that the "training culture" was up to now quite limited (possibly related to the comparatively small size of most Australian firms). To what extent is it expected that enterprises will find by themselves the value of training as a productive investment, or can they be persuaded to increase their efforts, possibly through the proper incentives?

Reference may be made here to the French experience, especially in view of its similarities with the system of financial obligation which was adopted recently in Australia, but whose implementation has now been suspended. To what extent is it possible to explain the reluctance of Australian firms to accept the obligation (often perceived as an additional tax) by the fact that funds were to be paid to the Taxation Office and not (as in France) to Mutual Funds managed by social partners which are expected to re-distribute the resources for training purposes?

These comparisons raise more fundamental issues concerning the concept of training culture - and more generally speaking, of national culture. On the one hand, reference has been made earlier to the temptation to transfer pieces of a foreign experience to a different national context. But on the other hand, one should be careful not to interpret differences as a kind of permanent and fixed feature which would be for ever attached to a people. The issues discussed in this paper should rather be approached in terms of the result of history and of a set of institutional arrangements. Once again, a systemic approach is necessary to assess the policies which may progressively modify the context and facilitate the attainment of specific objectives.

References

Bertrand, O. 1996. *Financial and Fiscal Devices to Encourage the Development of Vocational Training: A Case Study of France*, European Institute of Education and Social Policy, Paris.

CEDEFOP (European Centre for the Development of Vocational Education) 1993, 1994. *Vocational Education in ...* (One volume for each Member State), Berlin.

CEREQ/OECD 1994. *Apprenticeship: Which Way Forward?*, Paris.

European Commission 1996. White Paper on Education and Training. *Teaching and Learning: Towards a Learning Society*, White Book, Brussels.

European Journal of Education 1993 and 1995. "Research, Development and Policies", Vol. 28, No. 2, 1993, and Vol. 30, No. 3, September 1995.

Gordon, J., Allade, J.P. and Parkes, D. 1994. *Structures of Vocational Education and Training (VET) and the Match Between Education and Work: An International Comparison: Synthesis Report*, European Institute of Education and Social Policy, OSA Publikatie, Den Haag.

Lauglo, J. 1993. *Vocational Training: Analysis of Policy and Modes*, UNESCO/International Institute for Educational Planning,, Paris.

Organisation for Economic Co-Operation and Development 1994a. *Vocational Training in Germany: Modernisation and Responsiveness*, OECD, Paris.

Organisation for Economic Co-Operation and Development 1994b. *Vocational Training in the Netherlands: Reform and Innovation*, OECD, Paris.

Organisation for Economic Co-Operation and Development 1994c. *Vocational Education and Training for Youth: Towards Coherent Policy and Practice*, OECD, Paris.

Organisation for Economic Co-Operation and Development 1996a. *Assessment, Certification and Recognition of Skills and Qualifications*, OECD, Paris.

Organisation for Economic Co-Operation and Development 1996b. *Vocational Education and Training for the 21st Century: Opening Pathways and Strengthening Professionalism*, OECD, Paris.

Organisation for Economic Co-Operation and Development 1996c. *Changing Pathways in Vocational Education and Training*, OECD, Paris.

Skilbeck, M., Connell, H., Lope, N. and Tait, K. 1994. *The Vocational Quest: New Directions for Education and Training*, Routledge, London.

LEARNING TO EARN ALL OVER AGAIN: CURRENT ISSUES IN VOCATIONAL EDUCATION AND TRAINING IN THE UNITED STATES

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Introduction

Over the past thirty years, the institutions in the United States that educate and train people for employment have grown in number and complexity. High schools, the traditional locus of vocational education, still provide some job-specific education, but increasingly vocational education takes place in post-secondary institutions including community colleges, technical institutes, and area vocational schools. The development of job training programs, first through manpower programs during the 1960s and then through the Comprehensive Employment and Training Act (CETA) during the 1970s and the Job Training Partnership Act (JTPA) during the 1980s, added to the number of programs, as have job training programs provided through the welfare system. Other special-purpose programs have proliferated, included those for dislocated workers – individuals who become unemployed as a result of economic dislocations beyond their control, like the decline of defence industries or competition from foreign producers. Many states have initiated their own economic development programs, providing yet other training resources intended to lure employment from other areas, facilitate local expansion or forestall employers from leaving the area. Proprietary schools have also increased their enrolments, partly in response to increased student aid during the 1970s. Thus the "system" of work-related education and training institutions – those that consciously prepare individuals for relatively specific occupations that do not require a baccalaureate degree – has become increasingly complex and variegated.

Many of these developments have taken place in response to specific problems related to unemployment, poverty and increasing welfare costs. In addition, a more general sense of urgency around economic conditions has affected the mainstream of education. Since 1983, the United States has been in a frenzy of educational reform (much of it initiated by *A Nation at Risk*, a report with particularly urgent language). The danger, according to this report, was that "the educational foundations of our society are presently being eroded by a rising tide of mediocrity ..... We have, in effect, been committing an act of unthinking, unilateral disarmament". In response, a succession of reforms was initiated, largely in the K-12 educational system, largely a "back to basics" movement stressing conventional academic subjects (described in Section 1 below). But *A Nation at Risk* was important beyond the specific reforms it engendered, because it put education in the limelight and spawned a series of other commission reports, each reasserting the importance of economic renewal, though each with its own particular emphasis. The result has been a renewed emphasis on using schools and colleges as mechanisms of economic growth and competitiveness – that is, on the vocational aspects of schooling in a general sense – even though there has been much less consensus on what needs to be done and many fewer reforms that have affected high schools, colleges and job training programs. In many ways the current debate is a recapitulation of one around the turn of the century, when the issues were also those of how schools ought to help the cause of economic growth and of "learning to earn" (Lapp and Mote 1915).

During this national debate, some of the programs that are most directly linked to preparation of the workforce have escaped its influence. In some cases – post-secondary occupational education in particular – this is because there are relatively few federal or state mechanisms for achieving reform on the local level. In other cases – particularly short-term job training, because of its historic divorce from education – programs have been insulated from national discussions. Still, one of the puzzles to confront in the United States is the disjunction between a near-consensus on need to change the educational system in response to economic pressures, and the limited amount of reform in certain areas of the education and training system. To understand this disjunction it is useful to review several aspects of educational policy-making in the United States.

The argument of *A Nation at Risk* illustrates a critical peculiarity. Any sober look at the economic failings of the U.S. – or any other country – would come up with a cornucopia of explanations. In the United States, declining rates of savings and investments, relatively high interest rates choking off investment, a high federal deficit crowding out investment and competing for federal spending, an emphasis on the short run rather than the long run, and a number of poor decisions by business "leaders" in sectors like steel, automobiles, and consumer electronics are among the leading explanations. The focus on the educational system as primarily responsible, rather than developing a coherent series of explanations with initiatives to address each of them, reflects the political impossibility of developing a serious economic policy in a country still wedded to *laissez faire* ideals. But education and training – almost entirely publicly-supported in the elementary-secondary schools, heavily public in higher education, and entirely federally-supported in job training programs – are fair targets for public policy; therefore *educational* reforms must substitute for the *economic* reforms that are politically impossible.[1] The entire exercise thereby establishes a disjunction between the stated goals of policy – economic renewal, economic growth, international competitiveness, declines in unemployment and poverty – and the means of achieving them through educational reforms. This in turn places the educational system in a strange dilemma: while the attention to education since *A Nation at Risk* has been welcome, educational institutions might reform themselves forever and still not enable the country to come closer to its economic goals.

The method of *A Nation at Risk* was also peculiarly American. The report was issued by the National Commission on Excellence in Education, a task force convened by the Secretary of Education but unconnected to any federal legislative initiative. Indeed, the President at the time, Ronald Reagan, was consistently hostile to any and all federal initiatives in social policy, and tried as best he could to diminish a wide variety of federal social programs. The report therefore had an influence not by initiating federal legislation, but by creating a rough consensus that something needed to be done. In addition to generating other reports and counter-reports, *A Nation at Risk* led a number of states to increase high school graduation requirements, institute minimum competency tests for students and teachers, and re-emphasize the standard academic curriculum in the elementary-secondary schooling system. Policy-making since then has tended to take the same form, sometimes labeled "commissionitis" (Peterson 1986): a commission – sometimes governmental, often private – generates a report that purports to be a consensus about an issue, but without any legislative or executive authority, and then the process by which its recommendations are enacted is indirect indeed. Sometimes, as with *A Nation at Risk*, states take the lead; at other times, as with the Department of Labor *Secretary's Commission on Achieving Necessary Skills* (SCANS, described in Section 1) or the W.T. Grant Foundation's report on *The Forgotten Half*, commissions establish a climate that facilitates other initiatives; and sometimes, because of their disconnection from the policy process, commissions generate a following without leading to any changes.

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[1] This is hardly a new development; Kantor (1994) has pointed out that most reforms of Lyndon Johnson's Great Society were educational reforms, in contrast to the more substantial reforms of Roosevelt's New Deal.

"Commissionitis", and educational policy-making in general, also have to wrestle with the problems inherent in a federal system with a limited central government. The fact that states, rather than the federal government, took the initiative in the wake of *A Nation at Risk* is symptomatic of the weak role of the federal government in education. The federal government provided only 6.6 percent of funding for elementary-secondary education in 1991-92 – down from a high of 9.8 percent in 1979-80 – and most of that supports compensatory education for low-income children, special education for the handicapped, bilingual education and other special-purpose programs for specific populations. In post-secondary education, only 5.2 percent of overall revenues came from the federal government in 1991-92, though another 4 percent of revenue came from tuition supported by federal grants and loans for students.[2] Only in the system of short-term job training programs, which are entirely federally-funded, does the central government have the power to direct programs. Therefore when *national* problems arise – and the problems of national competitiveness and low academic standards relative to other countries, and of low-income and racial-minority students performing poorly in school are all examples of national problems – the ability of the *federal government* to shape education is quite limited.

In fact, the inability of the central government to initiate reform has recently become even weaker. The elections of 1994 brought into power a large number of Republicans hostile to government intervention in any form – except exorbitant defence budgets, spending on "intelligence" agencies that do nothing but get the country into trouble, and continued subsidies to business. Even those federal programs that do exist are now being consolidated into block grants, with revenues reduced and states given the power to make crucial decisions. While the precise form of consolidation is not yet clear, it will almost surely reduce the resources available for educational reform and replace any national approach with a set of 50 state policies, wildly uneven in their purposes and coherence.

A final disjunction is important to recognize. In considering what to do about our international competitiveness, Americans have often looked longingly at other countries that appear to be doing much better – particularly, in recent years, at Germany and Japan. Such comparisons often lead to suggestions that we borrow practices from other countries, particularly the German apprenticeship system (described in Section 1) and the Japanese emphasis on high standards and discipline. But such recommendations usually neglect the fact that other institutions are necessary for such practices to work, institutions that are inconceivable in a *laissez faire* economy and government. For example, the German apprenticeship system requires an institutionalized form of labor markets, with occupations and skill requirements clearly defined and then regulated by a system of strong unions and strong employer organizations. But instituting such a complex of institutions would require much more intervention into labor markets, and much more constraint on how employers operate, than is feasible in the United States. The result is that borrowings from other countries often take specific practices – like work-based "apprenticeships" – out of context, changing practice on the periphery of the educational system, but without reforming the other institutions necessary to support real reforms.

In this paper I review the major recent developments in the American educational system, some of them in response to the climate of urgency around educational reform. I concentrate on the three most important elements of the educational system that explicitly prepare individuals for the workplace, at levels below the baccalaureate degree. I examine vocational education at the secondary level in Section 1, and occupational education at the post-secondary level in Section 2. In Section 3 I analyze the economic effects of post-secondary occupational education and the characteristics of the sub-baccalaureate labor market – the market for those with at least a high school diploma but less than a baccalaureate degree – because this market is crucial for both secondary and post-secondary vocational education. Finally, I examine the system of short-term job training, in Section 4.

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[2] Another 7.2 percent came in the form of restricted grants and contracts, largely for specific research projects.

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The components of vocational education and training could, of course, be knit into an overall system, and there have been various proposals for doing so which I mention in Section 4. But, consistent with a general approach of uncoordinated public programs in a *laissez-faire* economic system, this has not yet happened. In the Conclusion (Section 5), I return to the central dilemma of how it is possible to move toward reform of a complex education and training system within a political and economic atmosphere committed to individualism and *laissez faire*.

1. Developments in Secondary Vocational Education

The historical locus of vocational education in the United States has been the high school. Since the turn of the century, secondary schools had offered relatively job-specific preparation for entry-level positions in such fields as agriculture, business (largely secretarial and clerical positions), the crafts, and retail trade, with home economics a largely non-occupational anomaly added to vocational education as a concession to the movement for "scientific" homemaking. For the most part vocational education was incorporated into comprehensive high schools containing both academic (or college preparatory) tracks and vocational tracks; less often – because of the American commitment to egalitarian ideals (if not practices) – vocational education was located in vocational high schools, segregated from academic education.

During the 1960s and early 1970s secondary vocational programs grew, in part because of increased federal support for vocational education and for area vocational schools designed to provide more comprehensive offerings in schools available to a number of high schools in a region. However, in the last two decades, secondary vocational enrollments have declined substantially. One of the reasons has been the perception, common since the very beginnings of this century, that vocational education has been a "dumping ground" for those without the ability to do well in academic tracks, providing a route into a second tier of occupations rather than the high-status professional and managerial positions requiring a college degree. This perception has been reinforced by the evidence that enrollment in vocational programs does not enhance subsequent employment or earnings, compared to enrollment in either the academic or the general track.[3] A second powerful reason for declining vocational enrollments has been the increased academic requirements for high school graduation, enacted in many states in the wake of *A Nation at Risk*. Indeed, in many school districts only a smattering of vocational courses persist – in keyboarding, accounting and other business procedures, and home economics, for example – or vocational offerings have been concentrated in one school within a larger district (Grubb and McDonnell 1991). Partly as a result, a large number of students take a few vocational courses, but very few take a coherent *program of* vocational education, with a progression of courses of increasing sophistication. There are exceptions, of course: many states in the South still have strong area vocational schools, and states like Ohio, Oklahoma, and Delaware have vocational high schools where students can take three years or more of coherent vocational programs. But overall the pattern is clear: enrollments in job-specific vocational education for entry-level occupations have been declining at the secondary level, and virtually no one proposes to revive this historical form of vocational education.

Instead, there have been various discussions about how high schools can meet the demands of preparing a more competitive workforce, but without following the path of the traditional vocational education – discussions about what we might term the "new vocationalism".

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[3] The general track is one that is neither college preparatory nor specifically preparatory for occupations. It is now widely viewed as being the most worthless facet of the high school, and many schools are trying to eliminate the general track.

1.1 The Strands of the "New Vocationalism"

A Nation at Risk epitomizes the first strand of the new vocationalism, with its insistent rhetoric about the need for economic renewal. To be sure, the emphasis on economic roles for schooling was leavened with a brief nod to preparing a well-informed citizenry. *A Nation at Risk* approvingly quoted Thomas Jefferson's maxim: "I know of no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them but to inform their discretion". But this was an afterthought; the dominant rationale for schooling – indeed, the only one, in the more utilitarian reports like that of the Secretary of Labor's Commission on Achieving Necessary Skills (SCANS), entitled *What Work Requires of Schools* – has been its preparation of future workers.

But the *content* of schooling was not to change. *A Nation at Risk* recommended the "New Basics" – English, maths, science, social studies, and (the only novelty) a half year of computer science. States followed with higher academic standards for students embedded in graduation requirements, new testing requirements, and new content standards for teachers (Tanner and Tanner 1990). As many commentators noted, the dominant response was "more of the same" – the same academic curriculum that has dominated the high school since the nineteenth century, taught in roughly the same ways though with a new sense of urgency. In response, enrollments in conventional academic subjects increased – even those subjects (like history and social studies) associated more with political than economic purposes, because of their inclusion in the "new basics" – at the expense of enrollments in vocational and remedial subjects (Coley 1994). One might complain that the combination of vocational rationales for schooling and a conventional academic curriculum could only exacerbate the disjunction of the American high school: students realistically perceive the high school as an inescapably vocational institution, critical to their employment futures, while the dominant courses are those of the academic track, taught as "school subjects" with their importance for later employment obscure.[4]

The first round of school reform did change course-taking patterns, but otherwise mediocre performance seemed to drag on. One of many responses, in the current bewildering array of reform movements, has constituted a second strand of the "new vocationalism": the argument that the changing economy requires new skills of its workers, and therefore new approaches to teaching in the schools. In the widely-read report of the Secretary's Commission on Achieving Necessary Skills (SCANS), *What Work Requires of Schools* – with the Secretary of Labor displacing the Secretary of Education as the chief arbiter of schooling – the requirements of the high-skill workplace now require a range of basic skills (including reading, writing, maths, listening and speaking) but also thinking skills (like decision-making, problem-solving, knowing how to learn) as well as personal qualities necessary at work like responsibility, sociability, self-management, integrity and honesty (SCANS 1991). But these SCANS skills, or "workplace basics", or "generic" skills (Stasz et al 1995) are not well taught in conventional didactic instruction, with its emphasis on individualized rather than cooperative learning, on abstract principles and decontextualized instruction, on fact acquisition rather than problem-solving abilities. Therefore, this argument has led to calls for changing the nature of instruction by including more experiential learning outside of conventional classrooms and more "contextualized" instruction. For example, the SCANS Commission called for revising the abstract approach to learning.

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[4] High school students rank vocational goals higher than intellectual, personal, or social goals. However, both parents and teachers rate intellectual goals the highest, and rank vocational goals third and fourth, respectively – creating a potential conflict in how they all view high schools. See Goodlad (1984), Ch. 2.

SCANS believes that teachers and schools must begin early to help students see the relationship between what they study and its applications in real-world contexts. We believe, after examining the findings of cognitive science, that the most effective way of teaching skills is "in context". Placing learning objectives within real environments is better than insisting that students first learn in the abstract what they will then be expected to apply. Reading and mathematics become less abstract and more concrete when they are embedded in one or more of the competencies; that is, when the learning is "situated" in a system or a technological problem.

By referring to the work of cognitive scientists, the SCANS Commission explicitly linked the demand of employers to the claims of certain educational reformers. The metaphor of "cognitive apprenticeship" captures this approach: just as apprentices learn the tasks of their trade in the context of on-going work, so too the student-as-apprentice-learner would learn academic competencies in some meaningful context, with a gradual introduction to the task as a whole; the mastery of simpler components before moving to more difficult tasks; the support of the master or teacher, providing guidance ("scaffolding") at early stages and then allowing the apprentice/student to do more on his or her own ("fading"); the teaching not only of a complete range of technical skills but also the interpersonal skills, the customs, and the culture of the craft (Collins, Brown, and Newman 1989). As a model of teaching, this is quite different from the standard didactic approach in which learning lacks any context, in which the ultimate goal of instruction is either unclear or (as in the case of college admission) abstract, and in which teachers provide information without the monitoring, demonstration, and support of the idealized master.

However, while the methods of instruction may have to change, this does not mean that the content of formal education should change. The subjects illustrated by proponents of cognitive apprenticeships are still those of the standard academic curriculum. SCANS has suggested how to teach various SCANS skills (e.g. interpersonal skills, systems thinking, and knowledge of technology) in core curriculum areas like English, maths, and science, and recommendations for the "forgotten half" of students neglected by the academic curriculum (W.T. Grant Foundation 1988) continued the conventional curriculum of the high school, while adding to it various forms of community-based learning. In particular, it has become clear that the "skills employers want" are not those of conventional vocational education. The Committee for Economic Development (1985) declared that "Business, in general, is not interested in narrow vocationalism. It prefers a curriculum that stresses literacy and mathematical and problem-solving skills." Similarly, the Panel on Secondary School Education for the Changing Workplace (National Academy of Sciences 1984) concluded that the education needed for the workplace does not differ in its essentials from that needed for college or advanced technical training. The central recommendation of this study is that all young Americans, regardless of their career goals, achieve mastery of this core of competencies up to their abilities.

The second strand of the "new vocationalism" has therefore continued the economic and utilitarian emphasis of *A Nation at Risk*, placing employers and skills they profess to need in the driver's seat, and continuing the emphasis on a conventional set of academic subjects (though with transformations in the nature of instruction).

The third strand of the "new vocationalism" has more directly addressed the deficiencies of the "old vocationalism" – traditional vocational education in high school dating from the turn of the century, generally focusing on specific skill training for entry-level jobs. A large number of critics of conventional vocational education have called for occupational preparation to become broader, better connected to academic content, more inclusive by allowing goals (like post-secondary education) in addition to immediate employment, and been more critical of the current system of employment than is conventionally the case.[5] Such efforts to call for a more general form of vocational education, better integrated with academic instruction, have a long history behind them, linked to the deficiencies of specific vocational training on the one hand and to problems with academic instruction on the other (Grubb 1995b). Such improvements in vocational education have been given a substantial boost by the 1990 Amendments to the Carl Perkins Act funding vocational education. The Amendments required that every program supported by federal funds "integrate academic and vocational education in such programs through coherent sequences of courses so that students achieve both academic and occupational competencies". Other sections supported tech-prep programs combining high school and post-secondary education (usually community colleges) – an innovation which provides opportunities for linking and integrating both the high school and the post-secondary curricula, and which clarifies that vocational education is not necessarily a terminal program for the "non-college-bound". Still another provision allowed resources for teaching students about "all aspects of the industry" they might enter, again an effort to broaden the content of vocational education beyond job-specific preparation.

In response, many secondary schools have developed various forms of curriculum integration, and tech prep programs – often interpreted simply as curriculum integration – have proliferated. Several networks of schools involved in curriculum integration and tech prep have developed, including one instituted by the National Center for Research in Vocational Education and one organized by the Southern Regional Education Board (Bottoms and Presson 1995). In large measure, the forms of integration adopted so far have been the simplest ones: the incorporation of more academic skills (including more writing, more reading, and more explicit mathematics) in vocational courses, and the development of "applied academic" curricula that present the applications of maths or writing or other "communications skills" in employment (Grubb and Stasz 1993, NAVE, Vol. III, Ch. 4). In many cases, the kinds of skills advocated by SCANS and other champions of the high-skill workplace – problem-solving, analytic thinking, and other higher-order thinking skills – are also supposed to be included, though such practices vary extensively because teaching such capacities requires revisions in pedagogy that are difficult to achieve. This form of the "new vocationalism" therefore represents a reform of vocational education by broadening its content, incorporating more academic skills and "SCANS skills" (or generic skills), all consistent with certain proponents of the "new vocationalism". But, unlike the more thorough forms of integrating academic and vocational education that I call "education through occupations", these practices typically focus on vocational education itself, concentrating on a group of clearly vocational students, and by grafting academic content onto existing vocational programs they typically continue the emphasis on preparation for relatively unskilled entry-level jobs right after high school.

A fourth strand of the "new vocationalism" has emerged from the new interest in school-to-work programs. Initially, such programs looked more like the German apprenticeship programs on which they were modeled (e.g. Hamilton 1990) – that is, work-based programs lasting relatively long periods of time (e.g. two years), capped by a "certificate of mastery" or other portable credential. As this conception of apprenticeship became incorporated into the School to Work Opportunities Act of 1984, it changed into a tripartite program, incorporating school-based learning in which academic and vocational education would be combined within "career majors" and linked to at least one year of post-

[5] See for example, Benson, 1992; Benson and Silver (1991); Spence (1986); Gray (1991); Claus (1989); Simon, Dippo, and Schenke (1991); Rehm (1989); Lotto and Murphy (1987); and Cantor (1989).

secondary education, a work-based component, and "connecting activities" to make school-based and work-based learning consistent with each other. The school-to-work legislation also contains hints of pedagogical reform since it calls for "the use of applied teaching methods and team-teaching strategies", and perhaps (by implication, at least) pedagogies that are more contextualized, student-centered, active or constructivist, and project- or activity-based. In many ways, then, school-to-work programs extend the reforms of the third strand of the "new vocationalism", extending the emphasis on the integration of academic and vocational education and on tech prep and adding a work component to provide a form of learning that formal schooling cannot.

It is, of course, too early to tell what school-to-work programs will become since the legislation is too new and most states are still in early planning stages,[6] and Congress may rescind some or all of the funding. It is possible that school-to-work programs will be used as levers to shape high school reform, constructing "career majors" or clusters such as those that are part of the fifth strand of the "new vocationalism" described below. But two other limited outcomes are possible and, in historical terms, more realistic. One is that school-to-work programs will develop work experience programs in which some high school students - especially those considered "at risk" - spend some time in work placements of varying quality, but without changing the structure, the content, or the pedagogy of the high school one whit (Grubb 1994, Kantor 1994). This would replicate the low-quality work experience programs that were widely supported during the 1970s without ever making much difference to students, and over time we could expect such efforts to wither (as did those of the 1970s). A brighter possibility is that school-to-work programs will generate another version of the "triple track" approach, creating a high-quality school-to-work program based on career majors and linked to work placements for small numbers of non-college-bound students - but leaving unchanged the conventional college prep track for small numbers of students bound for four-year colleges as well as the remaining "general" program for the great mass of students.[7] A cynical (but realistic) view of the school-to-work legislation is that it is a good example of "piddle politics".[8]

The fifth strand of the "new vocationalism" has (like the third and fourth strands) attempted to integrate academic and vocational education, but by restructuring high schools so that the opportunities for integration are more consistent. These have taken three forms, varying in their scale. The first form is career Academies which operate as schools-within-schools (Stern, Raby, and Dayton 1992, Raby 1995). Typically, four teachers collaborate: one each in maths, English, and science, and one in the occupational area that defines the academy - health, electronics, pre-engineering, transportation, finance, tourism, or any of a number of broad occupational groupings. Each class of students takes all four subjects from these teachers, and they stay with the same teachers for two or three years. Other subjects - social studies, history, foreign languages, and other electives - are taken in the "regular" high school, outside the Academy. One essential element, then, is that a group of teachers works with one group of students and with each other consistently, over a period of years. The opportunities for coordinating their courses, including special projects that cut across three or four classes, are

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[6] There are, however, numerous descriptions of models for school-to-work programs, see Stern et al (1995), Pauly, Kopp, and Haimson (1995), Goldberger, Kazis, and O'Flanagan (1994), Villeneuve and Grubb (1995).

[7] The "triple track" approach emerged most conspicuously in the academic, vocational, and general tracks that persist in practice if not in name, and in the life adjustment movement, with its program of life adjustment education for the 50 percent of students for whom neither academic college preparation nor vocational education was appropriate.

[8] My thanks to Lorraine McDonnell for this apt phrase. See also the discussion in Section 2 of my other paper at the Conference, "Firm Based Training in the United States: Implications for the Education and Training 'System'".

substantial; and because each Academy is focused on a cluster of occupations it becomes relatively natural to integrate occupational applications into academic courses. A second essential element is a relationship with firms operating in the occupational area of an Academy. Firms typically provide mentors to all students, often send individuals to talk about particular aspects of their operations, give tours of their facilities, and offer summer internships for students. These represent other sources of instruction and motivation (cognitive, behavioral, and financial) in addition to those provided by teachers.

Academies also create communities of both students and teachers, because of their small scale — contrasting with the chaos and anonymity of large high schools. The community of students is crucial to teaching methods involving cooperative group work, and the community of teachers helps not only with curriculum integration, but also with identifying problems that individuals student have. Since teachers come to know individual students much better than can most high school teachers, it is harder for students to become "lost" in an Academy. Entering an Academy requires a choice on the student's part, with all the benefits associated with active choice – including greater interest in the Academy's subject and a closer identification with a school that has been voluntarily chosen. At the same time, the need for students to make *informed* choices forces the issue of guidance into the open, and many schools instituting Academies have found it necessary to improve their counseling.

The second form involves schools in which students choose a cluster, or career path, or "major", often at the beginning or end of tenth grade (Grubb 1995c). As in the case of Academies, clusters are usually broad occupational or industry-based groupings, reflecting local labor market opportunities. The cluster then structures the curriculum for the remaining two or three years of high school, with students taking some coursework in the occupational area of the cluster – often a two-period class over the entire two-or three-year period – while other subjects are taken in regular classes "outside" the cluster. Some schools provide recommended sequences of academic courses; and a few schools have replaced conventional discipline-based departments with departments organized along occupational lines, so that students take all their conventional academic courses within the cluster. The organization provides focus for each student: each cluster has an obvious theme and the required course sequence reduces the "milling around" so common in high schools.

Clusters are somewhat like Academies, except that every student elects a cluster or major. Clusters therefore have all the potential of Academies to create a focus within which curriculum integration can take place and communities of both students and teachers can develop. The conception of clusters has been widely promoted at both federal and state levels: the School-to-Work Opportunities Act requires students to choose "career majors" no later than the beginning of the tenth grade; in California, the High School Task Force recommended "curricular paths" for all students; Oregon defined six clusters or "focus areas" for non-college bound youth in its Educational Act for the 21st Century; and a task force in New York similarly recommended the creation of career pathways for non-college youth.

The third form involves occupational high schools and magnet schools which emphasize preparation for clusters of related vocations. These include older schools like Aviation High School, the High School of Fashion Industries, and the Murry Bergtraum High School for Business Careers in New York, as well as magnet schools developed as mechanisms of racial desegregation, many of which have an occupational focus – in electronics, computers, or business, for example. Every student within an occupational school is enrolled in a curriculum incorporating courses related to the magnet's focus, though the number of these courses ranges from the relatively trivial – two or three courses within a four-year sequence, creating a magnet school in name only – to the substantial.

Occupational high schools are similar to Academies and clusters except that the scale is larger – the "cluster" is school-wide. There are obvious advantages for curriculum integration: since all academic teachers are preparing students within a broad occupational area, the incentives to incorporate applications and examples from this particular occupation are strong, and the resources to do so – especially the occupational teachers with whom examples and exercises can be developed – are right at hand. Just as Academies do, occupational high schools can also develop cultures supporting cooperation among teachers in the development of curricula. Occupational high schools are also excellent examples of "focus schools" – schools with clear missions, organized to pursue their educational goals and solve their own problems, innovative as the need arises, and operating with clear social contracts that establish responsibilities for teachers, students and parents (Hill, Foster, and Gendler 1990).

Academies, schools offering clusters or majors, and occupationally-oriented high schools vary in their scale, of course, but they share certain distinctive features:

- They all specify related academic and vocational courses for students to take, imposing some coherence on the "shopping mall high school".
- They all provide teachers from different disciplines a reason for meeting regularly around curriculum issues, increasing opportunities for cooperation and integration among all disciplines, including those considered academic and vocational.
- The combination of academic and vocational content allows students to plan either for post-secondary education, or for employment, or for the combination of employment and further education that has become so prevalent. Students in magnet schools often consciously follow such a "two-track strategy" or "parallel career planning". As one senior in a magnet school commented: "This is my last year, and I'm going to get my cosmetology license. After I get my license, I'll just go to college for business. If one doesn't work out, I'll go to the other" (Heebner 1995, p. 157).
- In theory, these practices allow for the integration of occupational content not only with the academic subjects considered to have the most utilitarian value – maths, science, and "communications skills" from English – but also with those subjects that have been entrusted with the moral and political purposes of education: literature, history and social studies. Indeed, an occupational focus may be a way to engage students in subjects that they generally dislike – for example, by exploring the history of technology and economic development, or the politics surrounding employment and technological change, or the themes of meaning and alienation around work.[9] This approach could also redress an imbalance that dates to the common schools of the nineteenth century: the preoccupation with preparing a citizenry for democracy has given political issues a central role in the curriculum, while economic issues and debates have never been prominent.
- Most schools with these practices have used broad clusters of related occupations rather than the occupation-specific focus of traditional vocational education – transportation rather than automotive repair, business rather than secretarial and clerical occupations, or manufacturing technologies rather than welding, for example. This provides opportunities for exploring a greater variety of academic topics, avoiding the problem of having modestly-skilled jobs dictate the teaching of relatively low-level academic content. It allows students to explore a wider variety of careers, and to understand how occupations are related to one another. And, if broadly structured, clusters can reduce the class, racial, and gender segregation common in high schools, as students from different backgrounds with varied ambitions come together – for example, as health clusters include both

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[9] These ideas are developed in Koziol and Grubb (1995). Unfortunately, we have seen very few examples of such practices in schools.

would-be doctors and those who aspire to being practical nurses, as an industrial technologies and engineering path includes both future engineers and those who think they will become workers on a local assembly line.

- Students must elect Academies or clusters, and in some cities can choose among magnet schools as well. This provides the advantages associated with the choice of a school; but it also requires students to think, early in their high school careers, about their occupational futures. Typically, schools which have adopted Academies, clusters, or a magnet theme have been forced to confront how students make choices, and have usually ended up strengthening counseling or developing more active forms of guidance and counseling.
- The use of occupational clusters provides a natural opportunity for linkages with appropriate post-secondary programs via tech prep programs, and with employers in those occupational areas in school-to-work programs. These linkages need not seem contrived, as they often are in the comprehensive high school, since Academies, clusters, and magnet programs have already focused the curriculum on occupations of interest to post-secondary institutions and to particular employers.

In looking across these five stands of the "new vocationalism", the differences are striking. The first has been conservative in every sense of the term, while the other four are "liberal" or reformist in different ways. The first two emphasize academic subjects without any vocational content, while the remainder incorporate vocational content as well. They vary in their emphasis on reforming pedagogy, with the second and fifth most insistent on changing teaching methods in order to impart the new skills required at work. And the fourth – the school-to-work movement – incorporates employment-based learning activities outside the school walls, though the others (except the first) incorporate some of this expansiveness as well. They all agree, however, in making the needs of employers and the skills required in employment first among the goals of formal schooling.

1.2 The "Second Wave" of School Reform: Reforming Again and Again and Again?

At the same time as there have been debates about different forms of the new vocationalism, a "second wave" of school reforms has taken place in elementary and secondary schools, following the "first wave" of reforms that followed *A Nation at Risk*. The first wave of reforms was in every sense a "back to basics" movement: conventional academic requirements for graduation were extended, with various competency exams for students introduced to enforce the teaching of basic academic skills. The second wave has been, consistent with American habits, varied and sometimes contradictory, but in general it has sought to introduce teaching practices and organizational forms that are more consistent with the approach to education I call "meaning-making", that others have called student-centered, or constructivist, or project- and activity-based, or teaching for meaning or understanding, or Deweyan, or "progressive". It stands in opposition to more conventional approaches to teaching that I call "skills and drills", labeled by others teacher-centered, or behaviorist, or didactic, and that has generally favored a relatively uniform curriculum dominated by the conventional academic disciplines. The discussion of these alternative approaches to schooling has not always been particularly clear; the many different practices associated with "meaning-making", on the one hand, " and "skills and drills", on the other, have only rarely been clarified; and the problems associated with hybrid practices that draw on both traditions have rarely been articulated. As a result there is great variation within the second wave of school reforms, and some inconsistency even within particular reforms.

In general, however, there have been four main strands within this reform movement (Andrew and Grubb 1995).

- *Teacher professionalism*. In contrast to the practices within skills and drills, where there has been a tendency to view teachers as the managers of a standardized curriculum that is "idiot-proofed" with textbooks and prescribed worksheets, the recent efforts have tried to develop conceptions of teachers as professionals in the sense that doctors and lawyers are professionals – with their own knowledge base, autonomous, able to develop their own practices in response to the varieties of students and their individual needs, with the capacities to develop their own curricula in collaboration with teachers from other disciplines and with those outside schools (like employers, in school-to-work programs). In turn, the development of a new form of professionalism requires different forms of teacher preparation and very different forms of in-service programs for existing teachers, in which teachers work collaboratively with one another and systematically explore alternative approaches to teaching. Teacher professionalism may also require a different form of teacher unions, one less dominated by the model of business unionism with its emphasis on wages and working conditions and its antipathy between "management" (administrators) and "labor" (teachers) and one more concerned with collaboration among teachers and administrators and more concerned about the encouragement of good teaching practices.

- *New Approaches to Teaching*. Many of the recent reforms foster more student-centered, project-based, and meaning-centered instruction. Some of these efforts have been discipline-specific, for example, the National Council of Teachers of Mathematics issued a widely-read set of "Standards" for the teaching of mathematics, an attempt to move the teaching of mathematics toward more problem-based approaches including non-traditional topics (like statistics). Others have been more general, like the Coalition for Essential Schools with its list of nine principles including an emphasis on "exhibitions of mastery" rather than conventional tests, and its conception of the student-as-worker replacing the metaphor of teacher-as-deliverer-of-instruction.

- *Restructuring*. While often vague in its intentions, the restructuring movement has sought to return control to the level of the school – away from the district and state level. While the purpose this would serve has not always been clear, in general restructuring is consistent with constructing schools as communities of learning operated by their teachers and administrators, rather than by distant district and state officials. In addition, the decentralization of decision-making power is consistent with heterogeneous schools, replacing an educational system in which all high schools are relatively similar; in turn, heterogeneous schools allow the development of specialized schools, like the magnet schools and schools based on clusters described above.

- *Choice Mechanisms*. A final element of recent reform has been the movement to give parents and students greater choice in the schools they attend. To its advocates, this kind of market-like mechanism promises to eliminate poor schools as parents avoid them, and to allow parents some power (through their selection of schools) over the quality of schools. Very often, choice mechanisms have been promoted by white parents attempting to flee racially integrated schools, or by parents favoring private education hoping to get public resources for private purposes (including religious-based schools). However, the choice movement is also consistent with the creation of magnet schools, charter schools, schools incorporating clusters among which students choose, and – like the restructuring movement – is consistent with replacing homogenous schools with more heterogeneous schools responding to a greater diversity of interests among parents and students.

The second wave of school reform has concentrated almost exclusively on the academic side of elementary and secondary schools. While the economic arguments about preparing a workforce for the next century have added some urgency to the reform movement, very few of the changes that have taken place within these mainstream reforms are related to the changes of the "new vocationalism". The principal reason is that vocational education has always been on the periphery of the secondary schools, of lower status than the "academic" track, and so it is not surprising to find that reforms directed at the occupational purposes of secondary schools are somewhat independent of those aimed at the main "academic" purposes. However, many of the elements of the "new vocationalism" are consistent with the different strands of the mainstream reform movement.

In the United States there has been a long history of "reforming again and again and again" (Cuban 1990) – of reforms followed by counter-reforms, undoing the changes that have just been laboriously put in place. Currently, there are glimmers of a "back to basics" movement starting in the United States, replacing some innovative pedagogies (and their associated practices, like novel assessments) with conventional pedagogy and reaffirming the conventional disciplines and the preoccupation with coverage of conventional content instead of interpretation and meaning.[10] While it is too early to tell whether the "second wave" of school reforms is over, an unfortunate consequence of a "back to basics" movement is that it would probably also derail many of the emerging practices of the "new vocationalism", and in that important sense the second wave of reforms and the new vocationalism are linked.

Despite the tendency toward "reforming again and again and again", past periods of reform have usually left some lasting residues. The reforms of the 1960s, for example, put equity issues permanently on the national school agenda; the "first wave" of reforms in the 1980s probably made accountability a more permanent aspect of public education. My own prediction is that the current round of reform is likely to leave a greater variety of secondary schools in existence, with more magnet schools, charter schools, and occupationally-focused high schools than existed twenty years ago. This is a landscape relatively hospitable to different forms of the "new vocationalism", though one in which most of the old, job-specific forms of vocational education have been displaced.

2. Developments in Post-Secondary Occupational Education

One corollary of the slow decline of occupation-specific preparation at the high school level is that post-secondary occupational education has expanded to take its place. Principally, this kind of vocational education takes place in community colleges, with smaller amounts in post-secondary technical institutes, in area vocational schools, and in private profit-making trade schools (or proprietary schools). In 1989-90, for example, there were about 16.2 million students enrolled in post-secondary education, of whom 7.6 million (or 46 percent) were in four-year colleges. Another 4 million (about 25 percent) were self-described occupational students in community college, 2.8 million (17 percent) were academic students in community college, 231,000 (or 1.4 percent) were in public technical institutes, about 1.4 million (or 8.6 percent) in proprietary schools, and 270,000 in private junior colleges (Tuma 1993, Table 2.1, based on 1989-90 NPSAS data). These institutions vary substantially. Community colleges and technical institutes emphasize one-year certificate programs and two-year Associate degree programs;[11] they differ principally in that technical institutes offer occupational programs only, while community colleges offer academic programs for students intending to transfer to four-year colleges as well as serving a variety of other purposes (described below). Area vocational schools began as secondary schools offering vocational programs for high schools within a broad region, but with dwindling secondary enrollments they have tended to establish post-secondary

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[10] There have been a series of discipline-specific projects, following the great success of the National Council of Teachers of Mathematics Standards, that have outlined desirable content for such subjects as history, social studies, science, art, and geography. Because they are by construction discipline-specific, each of them has advanced an enormous agenda of material to be covered and perspectives to be mastered, a reaffirmation of the disciplines that make the interdisciplinary teaching of many meaning-making approaches more difficult.

[11] These refer to one and two-year programs of full-time study. However, a great deal of enrollment in postsecondary education in the United States is part-time, so that a "one-year" or "two-year" program may take many more years to complete. At the baccalaureate level, very few students complete in four years, and it is now common for institutions to calculate six and seven-year completion rates rather than measuring completion in four years.

programs as a way of staying open. They tend to offer very short programs – for example, 15-week programs – rather than either certificate or Associate programs.

"Private" proprietary schools, whose enrollments have been stimulated by the availability of student grants and loans for post-secondary education, represent the best and worst of the entrepreneurial spirit: such schools can pop up in response to market demand, and therefore bring a certain flexibility and market responsiveness to the education and training system, but they also lure uninformed students into programs with substantial tuition levels and no labor market value – and they have been responsible for the vast majority of defaults on student loans. As a result, views about proprietary schools differ widely: the proprietary schools themselves tend to use the metaphor of "a few bad apples" in a barrel otherwise full of sound apples, but given their generally non-existent effects on employment and earnings (Grubb 1993, 1994) a more appropriate metaphor might be a barrel of rotten apples with a thin layer of sound ones at the top – the few well-known schools in culinary arts and technical subjects that are indisputably of high quality.

The most interesting developments in post-secondary education over the past thirty years have taken place in community colleges, which also dominate the enrollments in post-secondary occupational education. Community colleges started as "junior colleges", providing the first two years of a baccalaureate degree and providing an avenue to the baccalaureate for those who could not or would not attend a four-year college for all four years — the "transfer function", since student entering community colleges with the intention of earning a baccalaureate degree transfer from the community college to a four-year college. Slowly, particularly during the 1960s and early 1970s, occupationally-specific programs expanded their enrollments, and so an occupational purpose took its place alongside the transfer function; currently, 60 percent of students in community colleges declare themselves to be occupational students while the remaining 40 percent are academic or transfer students – though these figures are suspect for reasons I present below. As enrollments have expanded, a larger number of students have come to community colleges academically unprepared to do college-level work; because community colleges typically do not impose admissions requirements,[12] colleges faced the choice of either flunking large numbers of students – an unattractive option, given the egalitarian ethos of the community college – or providing remedial education. The dominant response has been to expand remedial education (often termed developmental education to avoid the negative connotations of "remediation"), as well as English as a Second Language (ESL) for non-English-speaking immigrants; the fraction of students needing remediation ranges from 25 percent to 50 percent (as high as 77 percent in the Tennessee system).

Still other purposes or "missions" have accumulated. One is known as "economic development". This term – widely but loosely used by a variety of local and regional planners trying to boost local economic activity and employment – has come to be synonymous with customized training or contract education, where community colleges provide short-term programs to the employees of particular companies. Usually there is some payment by the firm, but often public funds are used as well. Subjects include statistical process control, new word processing or spreadsheet systems, programs to train on new equipment (especially computer-aided equipment), "diversity training" (to encourage harmony among different racial and ethnic groups), and ESL (in areas with large immigrant populations). The economic development mission of the community college may seem similar to its role in occupational training, but in practice customized training tends to be offered in different divisions of the institution and with different faculty. Finally, community colleges offer a variety of

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12 In some states entering students have to have a high school diploma or its equivalent, but in others not even this requirement exists. The lack of admissions requirements is a point of pride among many community college administrators, who like to stress the "democratic" or egalitarian aspect of "the people's college". A very few over-enrolled programs, typically in nursing, impose admissions requirements.

adult education and community service courses, ranging from ESL to avocational courses in painting and photography to discussion groups about political and civic issues.

One more mission is important, though it is not usually mentioned. From interviews with community college students (Grubb 1996, Ch. 2), it is clear that many of them have no idea what they want to do in life. Some of them – those of traditional college age between 18 and 24 – have left high school without any sense of their occupational options, in part because career-oriented guidance and counseling in high schools is almost non-existent. Others – the older students often called "non-traditional" students, who comprise a majority of the community college population – may find themselves tired of a series of dead-end jobs, or displaced because of economic dislocations from promising careers. These individuals too tend to be searching for some direction, and despite their greater experience in the labor market they are often unsure of what they want to do. Such students, dubbed "experimenters" by some (Manski 1989), attend community college courses as a low-cost way of finding out more about a variety of occupations and disciplines, in part learning whether they have sufficient interest and ability to attend a post-secondary program of two to four years. While some of them find direction from random course-taking, many others appear not to – and the process of "milling around" and taking courses haphazardly, usually with little help from a counsellor, may not be the most effective way of finding a direction. Whatever the result may be, it appears that the numbers of experimenters are relatively large: in my non-random sample of students in California, which has particularly low tuition and therefore encourages such experimentation, perhaps two-thirds of the students who were there for broad occupational purposes fell into this category. As a result, the "mission" of providing information about labor market alternatives to these undecided students – really an offshoot of low tuition, proximity to many population centers, and the lack of career-oriented guidance and counseling elsewhere – appears quite important. In turn, this implies that the broadly occupational purposes of community colleges are larger than the numbers of students enrolled in occupational programs: many "experimenters" say that they are transfer students, while in reality they are searching for some occupational direction and declare themselves to be transfer students because this is the only obvious path for those without any idea of what they want to do.

Because of the variety of missions, community colleges include students with wildly different purposes:

- students intent on transferring to four-year colleges;
- students clearly interested in a particular occupational area, intending to enter the labor market after completing a certificate or Associate degree;
- students wanting to change occupations, perhaps as a result of economic dislocation, with clear ideas of what occupational areas they want to enter. Sometimes these include students with baccalaureate degrees who want to enter a field for which an Associate degree is more appropriate (like culinary arts, or the trades);
- "experimenters" searching for some direction, who may either be traditional-age students or older students with more labor market experience;
- students taking upgrade training, or coursework in the area in which they are already employed, as a way of enhancing skills to improve their performance or enhance their chances of promotion;
- remedial students, upgrading their basic academic skills so that they can gain entry to other occupational and transfer programs;
- immigrants learning English; and

- avocational students taking courses in the arts, literature, or any of a variety of subjects.[13]

The numbers of different kinds of students vary from college to college, and in many cases cannot be determined without lengthy interviews; it therefore is not possible to determine how important each group is, and debates about what purposes community colleges serve are therefore unavoidable. In many ways, this situation is a reflection within educational institutions of a market-oriented approach, rather than an institutional approach: community colleges (like comprehensive high schools) provide a variety of course offerings but with relatively little guidance or constraint on how students attend these courses. The result is that well-informed and decisive students can use the institution for clearly occupational or transfer purposes, while others are using it for vastly different purposes. The emphasis is on *students* deciding how to make their way through the institution, and the dominant warning is the same as it is for the marketplace: *caveat emptor*.

Given the variety of students, the flexibility of purpose, the lack of selective admissions, and the low cost and proximity of community colleges, a number of problems have emerged that dominate discussion of the community college. I particularly wish to consider transfer and completion rates. A universal finding is that the transfer rate of students into four-year colleges is low, and it has probably been declining as well. In addition, the rates of completion – of students completing certificates or Associate degrees – is relatively low. The defenders of community colleges claim that these are due to various structural factors: the large numbers of academically underprepared students; the greater financial pressures on community college students, who are more likely than students in four-year colleges to come from low-income families; the non-residential character of community colleges, which prevents students from being socially integrated into the institution;[14] and low rates of receiving student financial aid, which might otherwise alleviate some of the financial hardship. In addition, a conventional wisdom has grown up, especially among community college administrators, that holds that their students must know what they are doing since they are adults. Thus even students who appear to be "drop-outs" have in reality entered a community college to take a few courses necessary for their employment, and have "dropped out" only to return to enhanced employment. For example, Cohen and Brawer (1989), in many ways the standard text on the community college, conclude that students counted as dropouts "prove often to be those who seek a few courses now and then to satisfy their personal interests or to learn the skills they need for job entry or promotion" (pp. 56-57).

Despite these explanations, low transfer and completion rates are clearly a problem, especially because they are particularly low for minority students. Low completion rates are a particular issue for occupational students because the economic benefits of community colleges are substantially higher for students completing certificate and Associate degree programs, and are low and quite uncertain for those completing only a small amount of coursework. In response, community colleges have developed a variety of support services including tutoring, guidance and counseling, student tracking mechanisms, transfer centers providing additional information about the process of transfer, "matriculation" programs to set entering students upon the right course, and many others (see Beatty-Guenther 1994,

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13 A personal note: I was a community college student since my wife and I took a Lamaze course from a local community college. Why the citizens of California subsidized this course is unclear, though subsequently there have been new regulations requiring avocational and personal interest courses to cover their costs through tuition and fees.

14 The dominant theory of student retention is probably that of Tinto (1987), who poses academic integration and social integration as the two dominant factors in preventing dropout. Tinto's model is limited in failing to consider factors external to the educational institution, including employment and family obligations, as well as motivational issues, including the uncertainty about purpose that affects many community college students.

for a comprehensive review). The effectiveness of these mechanisms is largely unknown, however, and many of the cause of low completion are probably beyond the control of these institutions.

Another debate has raged over the economic benefits of community colleges and technical institutes. On the other hand, the defenders of community colleges have declared that their employment benefits are substantial, usually with weak evidence. Often, advocates claim that students who look like "dropouts" – who leave after a very short period of time, having accumulated trivial numbers of credits – have actually left because they have gained the skills they need for advancement, or to gain access to a particular job; having fulfilled the purpose for which they initially enrolled, they leave with their economic prospects enhanced. This view has grown into a conventional wisdom among many advocates for community colleges. It essentially assumes that all students are fully informed about the skills required for initial employment or advancement, that they enter post-secondary education to get precisely what they need, and that they then directly translate their enhanced skills into employment. On the other hand, the critics of community colleges have often argued as if there are no benefits whatsoever to community college education (e.g. Pincus 1980; and Brint and Karabe 1989). From these perspectives the economic benefits of attending community colleges – indeed, for accumulating any post-secondary education short of a baccalaureate degree – are either completely lacking or insubstantial; only if these institutions allow students to transfer and to earn a baccalaureate degree can they be of any value.

The debate over economic benefits is related to another conflict over the egalitarian status of the community college: the "cooling out" debate. In its original formulation by Burton Clark (1960), "cooling out" described a process where students of differing abilities entered community colleges, and then the least academically prepared and least able were persuaded, partly by their own failures and partly through the alternatives offered by guidance counselors, to shift from transfer programs into vocational programs with lower economic benefits. This process of "cooling out", or adjusting the aspirations of some students downward, has widely been interpreted as *in*egalitarian, contrary to claims that the community college is equitable by enhancing access to post-secondary education for the lower-class and minority students who normally would not continue past high school. And if the economic benefits to community college credentials are low or non-existent, then this would make the process of cooling out even more detrimental.

However, there are several flaws in the cooling out argument, and serious problems with past evidence about economic benefits. One is that the alternative for most students who attend community colleges is not attendance at four-year colleges, but rather no post-secondary attendance at all (Grubb 1996, Ch. 2). On the whole, therefore, community colleges serve to enhance educational attainment, not to cool students out from four-year colleges. And secondly, with the evidence recently available from several new data sets (reviewed in Section III below), it has become clear that there are substantial economic benefits to community college education. To be sure, the economic benefits are smaller than those from earning a baccalaureate degree, as one might expect; they require that individuals enter programs in certain occupational areas with substantial earnings – health, technical fields, business – and not in occupational areas like agriculture, child care and horticulture with low salaries; and in general it is necessary to find employment related to one's field of study in order to benefit. Furthermore, the economic benefits of completing small amounts of coursework are generally low and uncertain. But the general view of critics that community colleges provide no economic benefits, and are guilty of "cooling out" large numbers of students rather than enhancing the large numbers of students who enter them – is clearly wrong.

2.1 Policy initiatives and Recent Federal Legislation

In contrast to secondary education, where there have been numerous reform movements since 1983 and where state governments have been active in trying to reshape elementary and secondary education, community colleges and technical institutes are more immune from governmental pressure. States are in many ways the most crucial level of policy-making, because community colleges and technical institutes are creations of states. But almost uniformly, state policy related to the preparation of the sub-baccalaureate labor force has been neglected. Elementary-secondary education absorbs considerably more attention, partly because enrollments are much greater, expenditures much higher, and political interests more volatile, and four-year colleges and universities usually attract more attention too because of the higher status of baccalaureate education and of research institutions. In addition to their relative anonymity, community colleges and technical institutes have enjoyed a great deal of local autonomy in most (but not all) states. In part, this comes from the background of most two-year institutions in K-14 schooling systems, with their own traditions of local control and community funding. In part, the drive to become "colleges" – with the kinds of academic autonomy and freedom from external intervention enjoyed by four-year colleges and universities – has protected community colleges and technical institutes as well.

The result is that most states have done very little aside from establishing the types of institutions that exist, providing state funding in ways that have various effects on local programs, and requiring state approval of new programs (McDonnell and Zellman 1993, Ch. 3). There has been, for example, almost no control of curriculum (less than for the K-12 system, for example), much less regulation of instructors through teacher licensing and credentialing, and very few analogues to the kinds of exit exams and competency exams that proliferated in K-12 education during the 1980s. Even in the basic area of statistics, most states have collected information only on enrollment, and very few have any measures of outcomes (McDonnell and Zellman 1993, Table 3.6). By and large, states lack even the most basic information to know whether local institutions are succeeding in any way.

Furthermore, there has been relatively little effort to define and promote exemplary practice in these post-secondary institutions. In K-12 education, many states have worked quite hard to devise school reforms of great variety and complexity. But at the post-secondary level this kind of ferment and reform has been largely missing. There is, then, a disjunction between the crucial role of states in creating and funding two-year institutions and the lack of active state policies to improve them.

In general, federal policy has not been any more active. At the federal level, education policy has been dominated by funding for student grants and loans. Originally intended to support low-income students attending four-year colleges, student aid was extended to students in two-year institutions and proprietary schools in 1967. But this has been an awkward mechanism for funding community colleges and technical institutes, because student aid assumes attendance patterns – full-time enrollment, advance planning of enrollment, and stable educational goals – that are not true of many community college students, whose attendance and plans are much more erratic. As a result, relatively little federal student aid flows to two-year institutions: although they enrolled about 37 percent of post-secondary students in 1987, and 41 percent of low-income students, they received only 13 percent of federal funding.[15] Consequently, the enormous political energy that has been devoted to the federal student aid program has been largely peripheral to the preparation of the sub-baccalaureate labor force.

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15 See Grubb and Tuma (1991). This pattern of lower utilization of federal aid still holds once the differences among students in two- and four-year institutions are considered.

The one partial exception to the neglect of community colleges in federal policy has come in federal legislation for vocational education. This legislation has generally concentrated on improving the quality of vocational education, and on gaining access to vocational programs for groups – women, minority students and the handicapped, for example – that traditionally were denied access. While federal legislation has clearly been aimed at secondary vocational programs, it has also been available to post-secondary programs in community colleges and technical institutes. While the amounts of money have been small – about 2 percent to 4 percent of budgets for post-secondary occupational education – they have had a disproportionate effect, because they have been some of the only reform-oriented funding in the system.

The 1990 Amendments to the federal legislation initiated some reforms which are slowly starting to affect programs in community colleges. One was the requirement that programs spend federal funds to integrate academic and vocational education, a provision intended to pressure vocational programs to be broader and less job-specific, to encompass more of the higher-order competencies being demanded by employers, and to provide vocational students with a broader range of competencies appropriate for job mobility. While the requirement was initially ignored by most post-secondary programs, recently there has been an upsurge of interest in various approaches to curriculum integration: in methods of infusing greater academic content into vocational courses; in multidisciplinary courses that combine the perspectives of "academic" subjects like history, ethics, public policy and literature with occupational concerns and issues; and in the development of tandem courses and learning communities where students simultaneously take two, three or four courses from both academic and occupational areas. The development of curriculum integration is also a method of shifting community colleges away from the conventional structure of educational institutions – which offer a variety of courses and programs which students negotiate on their own – to one in which community colleges can specify a variety of competencies necessary for students to become effective workers and citizens and then offer a variety of educational activities appropriate to these competencies.

A second important element in the 1990 Amendments was the funding of tech prep programs. In their simplest forms, tech prep links the last two years of high schools with two years of community college, allowing students to have a more rigorous and well-rounded high school preparation in anticipation of a more sophisticated occupational program at the post-secondary level. The tech prep ideal also clarifies that high school occupational programs should not be "terminal" programs ending at high school, but lead to post-secondary programs as well – a crucial step in enhancing the status of occupational education, since it has often been seen as a dumping ground for non-college-bound students. So far, unfortunately, most tech prep efforts have concentrated on the high school component, and have often been simply vehicles for integrating academic and occupational education at the secondary level. Slowly, however, community colleges are coming to understand that tech prep can be beneficial to them as well as to high schools, particularly by allowing them to develop more sophisticated occupational programs and to count on better-prepared entering students, and a larger number now seem to be starting post-secondary reforms as part of tech prep efforts.

The 1990 Amendments required that states specify performance measures to judge the effectiveness of vocational education programs. While part of a larger accountability movement sweeping the United States, the requirement of performance measures has not yet led to any enforcement – for example, provisions to terminate funding for programs with low performance, or to reward programs with high performance. But, together with other initiatives now underway, including the movement for skills standards mentioned below and state efforts to ascertain the employment effects of community colleges, the early development of performance measures represents one of a number of influences that may make community colleges and technical institutes more outcome- and performance-oriented, rather than concerned wholly with enrollments (as is often the case).

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Finally, other initiatives have involved experimenting with skill standards. Like the school-to-work movement described above, the effort to develop industry-specific skill standards draws in part on infatuation with Germany and the various certificates of mastery embedded in its apprenticeship programs. Currently, the federal government has allocated funding for 18 industry groups to develop skill standards. The idea behind them is that *if* such standards can be created, *and* if employers accept such standards in hiring, and *if* occupational programs teach to these standards (possibly because no one could gain entry to the industry without meeting the standards), *then* it would be possible to enhance skills levels and therefore lift productivity in one industry after another. In addition, students meeting the skill standards would be more likely to find employment – even if they moved to different regions of the country, since these standards would establish "portable" credentials – than is now the case with an unstandardized set of credentials (like certificates and associate degree).

The movement for skill standards is just barely underway, and it is entirely too early to know how it will develop. However, a sceptical view is that – unlike Germany with its love of regulation, its strong employer associations and unions, its precise definition of occupations, and its uniform system of national job classifications and standards – the United States generally has an abiding hatred of regulation, its employer associations and unions are weak and would be unable to enforce any system of skill standards, small employers are particularly disconnected from national developments, and occupations and hiring practices differ dramatically among local labor markets. In effect, skill standards represent one element in an institutionalized approach to labor markets and skill development, and a shift away from the market-oriented approach of the United States, but they constitute only one of many interconnected elements necessary for an institutionalized system and may not be successful on their own.

The future direction of post-secondary occupational programs is not at all obvious. On the one hand, the decline of secondary vocational programs has cleared the way for post-secondary programs to expand. Unlike secondary programs, which have very few economic benefits, there are clear economic benefits to certain certificate and Associate programs, especially for those who find employment related to their fields of study. And various reforms are underway to enhance completion, to make these institutions more outcome-oriented, to enhance their curriculum in order to provide a broader range of higher-order skills demanded by employers, and to enhance the academic preparation of their students. On the other hand, the pressures for reform are not particularly intense from either the state or the federal levels, and many community colleges are able to sail along with substantial enrollments but without worrying unduly about the effectiveness of their programs. This is a situation in which post-secondary occupational programs could go the way of secondary programs before them – drifting into second-class programs, "dumping grounds" for marginal students, with low payoffs and generally irrelevant to employers who perform their training on-the-job – *or* they could become the major form of access to the very large number of sub-baccalaureate occupations and enhance their effectiveness for students and employers alike.

3. The Economic Context of Post-Secondary Occupational Education

One of the most crucial issues to confront in the vocational education and training system is the nature of economic benefits. At the secondary level, as I noted in Section 1, the economic benefits are non-existent for most programs, and this fact has contributed to the sense of high school vocational programs being a "dumping ground" for the least able students. At the post-secondary level, however, a debate about economic benefits has taken place for a number of years, partly because good evidence about economic effects has been missing until recently. In this section I summarize some of the most recent evidence, relying heavily on one particular data set, but supplementing these results with some locally-developed results and with findings from a broader survey of the existing literature. Then, because community colleges prepare their students for a distinctive part of the labor market, one that I

call the sub-baccalaureate labor market. I describe the special characteristics of this labor market, and clarify the challenges it presents for community colleges and technical institutes.

3.1 The Economic Benefits of Community Colleges

Recently, better information about the effects of sub-baccalaureate education has become available, partly because of the development of several large data sets with more detail about formal schooling. This kind of empirical work helps clarify how incomplete and unhelpful the debate between critics and advocates of community college has been, ignoring on the one hand evidence of how such programs can *under the right conditions* provide students with substantial benefits, while clarifying that other students – particularly those completing very little post-secondary education, or enrolling in low-paid fields, or unable to find employment in the fields for which they have been trained – may benefit not at all.

While the employment benefits of sub-baccalaureate education take many forms – enhancing access to higher-status occupations, and reducing unemployment and the variation in employment, for example – employment benefits are usually summarized in annual earnings. Information from the Survey of Income and Programs Participation[16] about annual earnings for men and women who have completed different levels of education suggest that the conventional wisdom about the value of formal schooling is just about right, since with only a few exceptions those with more formal schooling earn more. For my purposes, what is particularly important is that both men and women with Associate degrees and certificates earn more than high school graduates – though less than those with baccalaureate degrees, not surprisingly. In addition, the groups that have enrolled in post-secondary education but have failed to complete any post-secondary credentials also earn more than high school graduates, suggesting substantial benefits, even for those who might be considered drop-outs.

However, there are many more differences among these groups than simply the levels of education they have completed. Individuals who have enrolled in post-secondary education tend to have higher grades in high school (as well as standardized test scores), and to have been in academic rather than general or vocational tracks; they are more likely to have parents who attended college and who can provide them information and support both during their post-secondary years and afterwards, in the complex transition from education to employment. Their families are likely to have higher incomes, enhancing

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16 The Survey of Income and Program Participation (SIPP) has several advantages. It includes individuals of all ages, rather than including just one cohort or a few relatively young cohorts. Because of this, it avoids the problem of trying to measure the benefits of education at relatively early ages – for example, right after completing education, or in an individual's mid-twenties. This is critical because earnings differences among groups with different levels of schooling typically do not emerge until the early thirties. The fact that earnings differences among groups with different levels of schooling typically do not emerge until the early thirties, or some years after completing education, means that the studies completed by institutions of their own students – which typically survey them within a year of leaving – probably underestimate the benefits. In addition, those studies based on single cohorts examined during the twenties – e.g., Breneman and Nelson's (1981) analysis of the NLS72 data, or Lewis, Hearn, and Zilbert's (1993) study of the high school class of 1980 six years after leaving high school – may not be able to identify earnings differences. The SIPP has better information about postsecondary education than most other surveys; but school attainment is self-reported, with inevitable biases, and information is unavailable about the types of institutions individuals attended. Finally, the information available about other characteristics of individuals aside from their education – characteristics like race, family background and labor market experience – is adequate, though some desirable information is missing, particularly on measures of ability and academic achievement. The other disadvantages of the SIPP data is that they are difficult to use because of a complex sampling scheme. For more technical details, see Grubb (1995).

their chances in other ways. Therefore it is necessary to account for the effects of these other potential influences on earnings through statistical techniques which can identify the contribution of education to earnings above and beyond (or controlling for) the influence of these other variables. Table 1 presents the effects of education on annual earnings with the effects of these other variables removed.[17] These results compare individuals to those with a high school education, so that they give the benefit of post-secondary education compared to what an individual would have earned with a high school diploma only. The figures in this and subsequent tables can be interpreted *approximately* as providing the percent increase in earnings[18]; for example, the figure in the upper left corner indicates that individual men with a Ph.D. in 1984 earned about 75 percent more than those with a high school education. Finally, some of these figures are positive, but because of uncertainties associated with sampling methods they might be positive only because the data collection wound up with an odd sample; those figures which are high enough and certain enough to be considered non-zero (or are significantly different from zero in a statistical sense) are denoted with asterisks.

In general, these results suggest a uniformly increasing effect of education, as one might expect.[19] Associate degrees have significant returns for both men and women, though not surprisingly lower than the returns to baccalaureate degrees, and the returns to vocational certificates are smaller still. The results for 1987 are representative: men with baccalaureates earned about 39.4 percent more than high school graduates, those with Associate degree earned 21.5 percent more, and those with vocational certificates earned 14.6 percent more. For women the benefits of a baccalaureate degree – 31.8 percent – are somewhat smaller than they were for men, but the benefits of Associate degrees and certificates – 23.4 percent and 16.4 percent respectively – are slightly higher.

In considering the group with some college but no credentials, the results are somewhat less clear. For women, the effects are generally insignificant, though some coefficients are significant – generally for larger amounts (3 or 4 years) of post-secondary education. I therefore conclude that entering post-secondary education but failing to complete a credential does not improve earnings reliably, unless perhaps a woman has three or four years of college. In turn, this implies that the high rates of dropping out (e.g., Grubb 1989) are especially detrimental to women: these individuals may have benefited from short periods of time in community college, for example by learning that post-secondary education did not suit them, but they did not get any employment advantages as a result. For men, the results are somewhat more positive. Moderate amounts of post-secondary education (1-2 years) have benefits similar to certificates, while more substantial amounts (3-4 years) provide benefits about equal to those of Associate degrees. However, small amounts of post-secondary education (less than one year) have

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17 The other independent variables include: those describing race and ethnicity, the education of the individual's head of household and whether the head of household was female; whether the individual is still in school; whether the individual is married, or disabled, covered by a union contract or still in school; the number of children (for women only); and measures of tenure on the current job, in prior jobs related to the current job, and in other unrelated jobs, including squared terms capturing non-linear effects of experience. The regressions also include a series of dummy variables to compensate for various imputations necessary because of incomplete data.

18 These figures are coefficients from the conventional semi-log functional form, with the log of earnings as a linear function of independent variables. These coefficients are percent changes only for relatively small changes.

19 Throughout these results, the problem of statistical significance appears over and over. Many of the coefficients in Table 1 are statistically significant at the conventional 5 percent level, but the differences between coefficients are often not significant, even when they are part of a clear pattern. In general, I report results that are evidence of a pattern even when differences are not statistically significant.

no effects in 1987 or 1990.[20] Therefore some men benefit from post-secondary education, even if they fail to earn credentials, but small amounts of post-secondary education – for example, the amounts that individuals accumulate when they take a few courses for a semester or two – are unlikely to benefit either men or women.[21]

The Effects of Credentials by Field of Study. The results in Table 1 describe *average* effects for individuals enrolled in very different kinds of programs. But for students contemplating post-secondary program, average effects are irrelevant; they need to know which particular fields or occupational areas are likely to afford them an economic advantage. Table 2 presents the returns to certificates, Associate degrees and baccalaureate degrees by field of study.[22] Despite problems with small samples in certain occupational areas, some clear patterns emerge. The modest average return to vocational certificates for men in 1987 of about 15 percent (in Table 1) are probably due to the effects of engineering, computer, and health-related certificates, though small sample sizes preclude much certainty about this result. The insignificant coefficient for 1990 appears to be an average of higher returns for business and engineering/computers, balanced by lower and possibly negative returns in other fields. For women, health-related certificates (and business and vocational/technical fields in 1990) have significant returns, but other fields do not, including the relatively common fields of business and vocational/technical subjects.

The effects of Associate degrees are somewhat clearer because sample sizes are larger. For men, the returns to Associate degrees are highest in engineering and computer fields; public service[23] and vocational/technical fields have significant returns in 1987 but not in 1990, while business is significant in 1990 but not 1987.[24] For women, business and health-related occupations have positive returns, while others do not; indeed, in vocational/technical fields (which include low-paid cosmetology programs) and in education (which is largely child care) the coefficients are negative though insignificant. Evidently, because of the substantial gender segregation in occupations at this level of the labor market and in the corresponding vocational programs, the results are substantially different for men and women except in business. This finding also suggests that efforts to move women into non-traditional occupations need not only to persuade women to enroll in the appropriate educational

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20 Even in 1984, when the effects of less that one year of college are significant, the effect is significant only for those aged 45-54 – indicating that men would have to wait a considerable period of time to realize any benefits from small amounts of postsecondary education.

21 Other data sets corroborate these results. In Grubb (1995d) I have compared the result of a number of studies of sub-baccalaureate education. In general, the coefficients for Associate degrees are in the range of .30 to .40; the coefficients for certificates hover around .20; and the coefficients for different definitions of coursework among those not completing postsecondary credentials are .05 to .12 (and often statistically insignificant).

22 The SIPP asks respondents to check a box describing the field of study, without any definition of fields or examples, and so some of the fields of study – vocational/technical and "other vocational" in particular – are ambiguous. The results for 1984 and 1990 are substantially identical to those for 1987.

23 In some regions of the country, public service includes fire fighters and police prepared through community college programs. Some legal aides and social service workers may be included in this category.

24 The vocational/technical fields include the trades and construction crafts, which may explain why the coefficient is positive and significant for men in 1987 but not for women.

programs, but also must change the employment patterns that deny women returns equivalent to those of men.[25]

Evidently, at the sub-baccalaureate level, it matters a great deal what field of study an individual enters. Some programs prepare their students for such poorly-paid occupations that there is no real advantage from attending a community college or technical institute; others – particularly in technical fields and business for men, in business and health for women – have more consistent and substantial returns. Some relatively common fields of study at the sub-baccalaureate level – education (or child care) for women, certain trades and crafts at the certificate level – provide very little if any increase in earnings, over those of high school graduates. What remains unclear is whether students are well-informed about these patterns, so that they can make well-informed choices among the occupational alternatives. Given numerous complaints about the lack of guidance and counseling in both high schools and community colleges,[26] it seems likely that many students are making poorly-informed choices and entering programs where the economic returns are insubstantial.

The Effects of Finding Related Employment. In the case of vocational programs, the economic benefits may depend on whether an individual finds employment related to his or her education. Because vocational programs are relatively job-specific, with technical and manipulative skills that are useful in only a subset of jobs, the economic returns may be low or even zero if an individual does not find related employment. Therefore the effects of post-secondary education (reflected in Table 1, for example) may represent averages of higher returns for those who have found related employment with lower returns for those with unrelated employment. Information is available about the extent of related and unrelated employment, using a relatively simple matching procedure linking fields of study in the SIPP data with Census occupation codes.[27] Because there are relatively few, broad fields of study, this matching algorithm should if anything err on the side of over-inclusiveness, or deciding that a program of study and an individual's occupation are related when in fact they are not. For individuals with baccalaureate degrees, roughly 60 percent of individuals in occupational areas have related employment. For those with Associate degrees, the proportion of related employment is lower than this 60 percent figure for men but higher for women; in examining the extent of matches by occupation, this proves to be due to especially high rates of finding related employment in business and health occupations, which tend to be dominated by women. The extent of relatedness among individuals with certificates hovers around 55 percent. Among individuals with some college but without a credential, the patterns for men suggest that those with more years of post-secondary education are also more likely to find related employment, but the patterns for women are erratic. Overall, individuals with credentials have higher rates of related employment than do those with small amounts of college – and so part of the higher economic benefits of completing coherent programs is due to the advantage that provides in finding employment related to one's field of study.

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[25] These results confirm earlier findings based on NLS72 data, which indicate that Associate degrees in technical subjects and health occupations have the most substantial returns, while in other subjects the returns were essentially zero (Grubb 1992a and 1995d).

[26] There is a general consensus that career-oriented counseling has all but vanished from most high schools. While there appear to be more resources in counseling and guidance in community colleges, they still appear to be inadequate relative to the need. Some evidence comes from a series of interviews in community colleges in four local labor markets, reported in Grubb, Dickinson, Giordano, and Kaplan (1992) and Grubb (1996, Chapter 1). Other evidence comes from the interviews with students summarized in Grubb (1996, Chapter 2).

[27] The matching algorithm was developed by Medrich and Vergun (1994), with a few changes: they did not classify education programs, which I then added; and they matched a category of "other" education with a number of particular occupations, while I have categorized individuals with "other" education as simply having an unknown match.

Tables 3 and 4 present the effects of post-secondary education on annual earnings (for males and females respectively), differentiated by whether an individual had employment related to his or her field of study, unrelated employment, or an academic field of study for which there was no attempt to match employment. Consistently, the returns to related employment are higher than the returns to unrelated employment; this is certainly true for Associate degree and certificates as well as baccalaureate degree, but it is also true for those with some college but not credentials. These results confirm the hypothesis that the job-specific nature of vocational education reduces its value in unrelated jobs. In a few cases, for example the baccalaureate and the Associate degree for men, the value of even an unrelated degree is positive and significant (even though substantially lower than the value of a related degree) – implying that these occupational degrees do have some general components that enhance productivity and earnings even in occupations unrelated to the field of the credential. However, in the majority of cases, and particularly for women, the coefficient for related employment is significant, but that for unrelated employment is not. These results imply that completing coursework is necessary but not sufficient to realize economic benefits and that placement in a related occupation is absolutely crucial to realizing the potential benefits of occupational education. And while community colleges do have mechanisms to link their programs to employers, enhancing the prospects for students to find related employment, in many cases these linking mechanisms are quite weak.

Local Evaluations of Economic Effects. Difficult as it has been to determine the benefits of sub-baccalaureate education, the results presented so far are in a sense still inadequate. They reflect *national* estimates of the value of post-secondary education, while students contemplating what education to complete, as well as institutions and policy-makers deciding what improvements are necessary, need information about the employment effects *locally*. (This is particular true because the sub-baccalaureate labor markets are generally quite local, with both employers and potential employees searching locally.) In addition, it seems reasonable that the economic benefits of sub-baccalaureate education should vary with local economic conditions: for example, labor markets with high unemployment rates might have lower returns to post-secondary education of all kinds than those with strong employment, and periods of recession are likely to reduce the employment of community college students as employers reduce their hiring.[28] The ideal results, therefore, would provide information about the employment effects of *local* programs, in particular occupational areas.

A promising approach to local studies has developed over the past few years, though unavoidably it suffers from some methodological problems. This method involves obtaining information from the Unemployment Insurance (UI) system about the employment and earnings of individuals who have enrolled in post-secondary institutions. Such data are regularly collected from those in most forms of employment; there is no need to send out a special-purpose questionnaire and risk low response rates.[29] Furthermore, such data are collected over an individual's entire employment history, potentially allowing an institution to see whether employment and earnings rise over time. They are, of course, available for students in different occupational areas, allowing comparisons among fields of study.

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[28] There have been no studies of the effects of local labor market conditions on the returns to sub-baccalaureate education. For some older results without detail on sub-baccalaureate education, see Hanushek (1973).

[29] On the methodology of using UI wage record data, see especially Baj, Trott, and Stephens (1991) and Levesque and Alt (1994). The method involves matching individuals' school records with their UI records through Social Security numbers. Those who are self-employed and those in agricultural occupations are not included in the UI system. Other problems arise near the borders of a state, where many students may work in neighboring states with a different UI system. However, typically about 85 percent of students can be located in UI records (much better than the response rates available through questionnaire methods, and at substantially lower cost).

Finally, by linking an individual's earnings history to his or her school records, it is possible to control for at least some of the variation in earnings that might be due to higher achievement levels while in post-secondary education, race and ethnicity as well as gender, family background (like income), and possibly some other personal characteristics.

The results of using UI data so far have been promising – and certainly consistent with the results in Tables 1 to 4. Results from Santa Barbara and Grossmont Community Colleges in southern California indicate that, three years after leaving college, those with Associate degrees earn more than certificate holders, who in turn earn slightly more than those who left with at least 12 credits but without any credential. (Those with fewer than 12 units were eliminated from the analysis on the grounds that they had not completed enough coursework to make any difference.) Furthermore, while those students who had been poor ("economically disadvantaged") earned less than those who were not, as one would expect from the considerable literature on the effects of family background, obtaining credentials increased the earnings of both poor and non-poor students and narrowed the gap substantially from what it was otherwise.

The results for different majors indicate that technical fields (drafting, electronics and computer science) and medical occupations (nursing and radiology) have the highest returns, as one might expect. Low-tech fields – restaurant management, graphic arts, business, office and information systems (OIS) – have the lowest returns, with differences sharper three years after leaving college than one year out.

Of course, it is not difficult for a hard-nosed econometrician to critique these results. They may reflect variation in motivation, or ability, or labor market experience; the substantial differences between the experiences of men and women are not reflected in these numbers; and patterns evident after three years may vanish in subsequent years. Still, the data on earnings the year prior to leaving college suggest that there was not substantial variation in earnings capacity among groups with different credentials,[30] and the consistency of the results and their comparability to national figures gives them additional credence. They are certainly more useful to students in the Santa Barbara area than any national results could be, and they appear powerful enough to provide warning about weak programs. Finally, the process of generating local studies can help to make community colleges and technical institutes more outcome-oriented, a consequence that in the long run will lead to improvements for students, employers and taxpayers alike.

3.2 The Nature of the Sub-Baccalaureate Labor Market

The sub-baccalaureate labor market – the group with at least a high school diploma but less than a baccalaureate degree – is a large and rapidly growing part of the labor force in the United States. The group with "some college" represented 13.1% of the labor force in 1967 but 28.3 percent in 1992, while those with a high school diploma decreased slightly from 36.3% to 34.2 percent over this period. Thus, the sub-baccalaureate labor market includes about three-fifths of all workers. In contrast, those with baccalaureate and graduate degrees increased from 11.6% of the labor force to 22.5% – still only one-third the size of the sub-baccalaureate group. The sub-baccalaureate labor market is obviously crucial to community colleges and technical institutes, which have increased their enrollments substantially over the past thirty years: from 13 percent of fall undergraduate enrollments in 1960, to 27 percent by 1970, 38 percent by 1980 and 44 percent by 1991 (National Center for Education Statistics 1992).

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[30] This is in effect a pre-post evaluation design, with relatively similar values for earnings prior to leaving college.

Unfortunately, the most common way of studying the interaction between education and employment – statistical analysis of large data sets, of the kind presented in the previous section – fails to provide much information about *how* formal schooling improves (or fails to improve) employment opportunities. To redress this lack of information, my colleagues and I carried out case studies in four communities, interviewing providers of sub-baccalaureate education in community colleges and technical institutes (the supply side) as well as employers (the demand side). The four communities were quite varied: one is dominated by high-tech manufacturing; one provides services to a large agricultural area; one is dominated by employment in finance, insurance, real estate and government. The fourth was a community with substantial amounts of manufacturing. Because the sub-baccalaureate labor market is so varied, we concentrated on six specific occupational areas: electronics technician, machinist, drafter, accountant, business occupations and computer-related occupations (Grubb 1996; and Grubb, Dickinson, Giordano and Kaplan 1992).

A number of characteristics prove to distinguish the sub-baccalaureate labor market. Of particular importance to educational providers are the following conclusions:

Relationships Between Employers and Educational Institutions: The sub-baccalaureate labor market is almost entirely local. In their search for employees, firms generally advertise locally. If they establish relations with any educational providers, they do so with community colleges or area vocational schools within the same community. Community colleges, technical institutes and area vocational schools target local employers as well, and deans and instructors report that students search for employment almost exclusively within the local community. The only exceptions appeared in cases of highly specialized skills, like those involved in the production of lasers, or in a very few cases where employers (usually large firms) have established good working relations with distant community colleges.

One obvious consequence is that the local relationship between employers and educational institutions is crucial: if students cannot find employment related to their education within the community, they are unlikely to benefit from their education by moving elsewhere. For several reasons, however, this relationship is often quite weak. By far the largest group of employers was simply unable to express any opinion about the providers in the local area. They were unfamiliar with local educational institutions; they did not know from which institutions their employees came; they were unable to venture any opinions about which local providers prepared their students the best or about what changes they would make in local educational programs.

One reason for weak relationships is that initial employment in the sub-baccalaureate labor market is dominated by smaller firms. Individuals leaving community colleges generally find employment in smaller firms at first. Then, because there can be relatively little mobility within small firms, the path of upward mobility requires them to move to larger firms with greater opportunities for on-the-job training, specialization, supervisory positions, higher earnings and benefits, and more stable employment. In smaller firms, hiring procedures are highly informal. Small firms rarely articulate any specific requirement for hiring – a particular educational qualification, for example, other than the widespread requirement of a high school diploma – and instead use casual assessments of skill to make their choices. In addition, they hire too few individuals in any one occupation to develop well-established ties with particular providers of education such as local community colleges or to accumulate information about the strengths and weaknesses of various sources of potential workers.

The providers of education and training in the sub-baccalaureate market contribute to weak relationships in other ways. While many community colleges have high total enrollments, the numbers of completers in any occupational area in one year are quite small – more likely in the range of ten to twenty, even for an institution with an enrollment of 25,000. Furthermore, there are typically many potential providers within any community: several community colleges within a reasonable distance, with area vocational schools, perhaps some remaining high school programs, a few proprietary schools, and shorter-term job training programs adding to the supply. The sense of the job-related education and training system being chaotic and fragmented was widespread among employers, as a local director of economic development commented:

> It sometimes feels like there are a million different training programs in the area. ..... I've been in this business for seven years, and I still can't tell you who they all are. I think it would be difficult to plan what to train for when it's hard to develop a comprehensive view of what's out there. I can't keep track of them, and I have a vested interest in it.

As a result, many employers are unable to distinguish among providers. Their responses to questions about the strengths and weaknesses of various educational institutions were vague and unreliable, and it became clear that these institutions do not have very clear reputations in the employer community.

At the same time, the ways in which community colleges might establish better working relationships with employers are often quite ineffective. In many cases, advisory committees meet infrequently and provide very little information to educators. Many placement offices are understaffed, and concentrate on part-time "stay-in-school" jobs rather than linking occupational programs with employers. Placement by individual instructors does take place, but tends to be sporadic and uneven. Student follow-up and tracking mechanisms, which can provide information to assess the strengths and weaknesses of occupational programs, are poorly developed in most institutions, so that most instructors and administrators have no idea where their students go. And while licensing requirements help establish congruence between employers and providers, they are quite rare outside of health occupations.

The striking exception to the general lack of information among employers about educational providers came in Cincinnati, where co-op programs cause employers and providers to collaborate. There, virtually every employer was familiar both with the co-op programs and with the specific institutions in the community – with substantial benefit to both parties.

The Skills Employers Want. Even though the employers in our four local labor markets varied in size, sophistication, and sector, they repeatedly stressed the importance of skills in four distinct areas.

(1) Job-Specific Skills. The dominant skill required by the majority of employers was facility on specific machines or with particular manufacturing processes, or familiarity with procedures specific to a given job (e.g. accounts receivable or cost accounting), or familiarity with a specific computer program (i.e. highly job-specific skills). Consistently, the preparation that educational institutions provide was criticized as too general. For example, a manager of electronics technicians for a semiconductor firm complained:

> What we'd really like to have [in addition to basic mathematical skills] that we can never really find is things that are more focused on semiconductor processing. There is no hope of finding somebody out of school who has done anything in plasma processing or knows what lithography is or any of the basic diffusion [processes].

Some employers acknowledged that school-based programs could not possibly meet their needs because the demands of the job are too idiosyncratic. As a manager in a cable manufacturing firm said:

> Unless you've worked in plant maintenance in the past, it's really hard to come in here and start working. Industry is not standardized. Electronics technicians come in [from educational institutions] and see our technicians all greasy and funky from the equipment, and they don't know what to make of it – there are just so many different variables. This plant needs a specific type of worker. To train for this specific type of worker – I don't know if you can actually do that.

This particular individual recommended more work-study programs as a way to combine more general education and job-specific training, a solution similar to the co-op programs in Cincinnati, but in the absence of such a program, he stressed the value of experience in hiring decisions.

A related criticism is that school-based programs are too theory-oriented, without sufficient practical or hands-on experience, not specific enough, and not oriented to producing a product. In talking about the superiority of the firm's apprenticeship program, the manager of a Cincinnati machining company said:

> The difference [between our apprenticeship program and educational programs] is that we base our instruction on real life situations and not on the theory behind it. We bring in actual parts. We bring in actual prints. We talk about real life situations. I don't think you get that necessarily in a school situation.

The director of a large milling company described the problem:

> I don't think the technical colleges necessarily can give the depth of training which can be learned in the industry itself. . . . They take [students] into a CAD class and will teach them some software but I don't think they, along with that, give them the depth of understanding of what they're really doing. They can make the shapes, and they can make the models, . . . but unless you are driven by a product, I don't know that it's gained you a whole lot. . . . If you're not working on a product-oriented [process], something that you're going to sell, something that's really got meat to it, that you've got to make money on, it's almost like it doesn't mean anything.

(ii) Motivation and Interpersonal Skills. Employers also commonly mentioned motivation, initiative, judgment, an appropriate attitude (especially in services and occupations dealing with the public) and communications skills. Indeed, while technical and job-specific skills are important, many employers rated these capacities – sometimes labeled "foundation" skills (SCANS 1991) – as even more important. As the manager of a custom machining company said:

> Skill is nice but not everything – we have guys out there who are super-skilled, but you can't get anything out of them because they don't feel like working that day. You have other people who are adequate [in their technical skills] who work hard all day – you're going to get just as much out of them.

In some cases, interpersonal skills are paramount in hiring. For example, when a brewery began hiring for the facility, one of the human resource managers reported:

> We focused not on technical skills but on interpersonal skills. We knew we could give them technical skills – that wasn't the issue.

The importance of these kinds of personal and "foundation" skills is linked to trends in employment: the flattening of hierarchies, the elimination of supervisory layers, and the tendency for employees to have more responsibilities and to interact with a wider circle of other employees.

(iii) Aptitude and "Common Sense": A large number of employers mentioned dimensions of "aptitude" – a facility which they could identify but which could not be readily taught. Examples included mechanical aptitude for machinists, visual aptitude for drafters, aptitude with numbers for accountants, and aptitude with people for those individuals working directly with customers.

Another elusive capacity mentioned by several employers was "common sense." As an engineering manager described it:

> We're looking for common sense, which is something that schools aren't real good at. You get the guys that excel within the academic environment – if it's in a textbook, textbooks tend to be black and white. In the real world, you don't have the certainty. You don't necessarily even have the optimum point on the curve-type scenarios. You have to go in and you have to find something, understand what's wrong with it. It's dirty, it's messy, you have multiple conflicts for your time.

In this description, "common sense" is the ability to apply knowledge – including the kind learned in school – in production settings whose complexity precludes there being any simple correct procedure or "textbook" solution.

(iv) Basic Skills: The employers we interviewed complained constantly about the lack of basic skills among their sub-baccalaureate employees. "The education system is falling apart", said one personnel manager. "Local school systems are highly political and very disorganized, [and] the kids suffer." In many cases, employers complained that applicants have sufficient technical skills but lack basic cognitive skills for the job, and that basic skills are being given short shrift in overly short training programs. As the director of personnel for a large machining firm complained:

> Kids coming out of these programs after one year want to be machinists. And it's just a longer process than that. And these programs, they try to feed so much into them in this 1,000 to 2,000 hours that they're doing, they try to run the gamut between some maths, some blueprint reading, but they skip on those to get them onto the machines, and when they don't have those [basic] skills they become nothing more than just operators.

Because basic skills are crucial, a high school diploma is a ubiquitous requirement; without a diploma, no applicant will even be considered for the occupations we examined. However, a high school diploma is clearly insufficient, and employers appeared stumped about what to do to improve basic skills.

3.3 Hiring Standards: The Roles of Experience and Education

The need for highly specific skills, for certain "foundation skills" like motivation and communications skills, and for aptitude and "common sense" means that employers cannot look to educational institutions to provide all the skills they need. Instead, virtually all employers in the sub-baccalaureate labor market look for experience when hiring – particularly for highly job-specific experience. Much more than formal schooling, experience is an indicator of the skills which employers value: mastery of specific machines, production processes or office procedures; motivation and persistence; and the ability to work with others. Over and over again, employers in all four communities insisted on the importance of experience over formal education – even for relatively low-level positions like accounting clerks. As the human resource manager for a moderate-sized tool and die company described their hiring:

> When people come out of [the local community college and area vocational schools] they still truly have [only] the basics. We would consider that to be entry-level, between $6.00 and $7.50 an hour. That is what we would normally pay someone that was just coming out of a vocational school or out of [the local community college] with little or no experience. Because truly in those areas, the experience is really the key. You can't truly learn everything there is to know in the classroom in order to excel and climb up the ladder.

Even where there is some recognition of the value of schooling, there remains some ambivalence about formal education – linked to the need for highly specific skills which are too narrow to find in any educational institution. For example, the personnel manager of a firm that produces box-forming machines reported:

> I have specifically told [the engineering manager] that I do not want anyone any longer whom we have to train. I want somebody who has some background and work experience if possible. You can have a super education, [but] if they don't have anything in our line of products, it's worthless. It's start from square one. .....

In most firms, therefore, it is difficult to compensate for a lack of experience with sub-baccalaureate credentials. The strong preference for individuals with experience creates a problem for new entrants into the sub-baccalaureate labor market: if every employer requires experience, it becomes difficult to enter the labor market and accumulate this experience. As one employer acknowledged, "My feeling is that entry level is tough: they really don't have any place to go unless there's a tremendous shortage."

An additional consequence of the dominance of experience in hiring decisions is that it contributes to employer indifference toward educational providers. Since experience, informal job tests and on-the-job probation count much more than educational qualifications in hiring permanent employees, there is simply no need to be familiar with local educational programs. Other problems with local community colleges exacerbated this problem, including the impossibility of keeping up with technological change in high-tech sectors, and the lag time involved in setting up new programs.

The dominance of experience generates a real puzzle: if formal schooling above the high school diploma is not required or rewarded in hiring, then what explains the economic benefits of sub-baccalaureate education documented in the previous section? There prove to be a number of answers to this puzzle, but they vary from occupation to occupation, and they help explain why the economic benefits to sub-baccalaureate education are so varied.

Technical Training. One important exception to the general pattern of requiring experience over formal schooling appeared in technical fields. Several high-tech manufacturers in the Silicon Valley area require Associate degrees for their electronics technicians, particularly an international firm whose employment standards are set by the national headquarters in New York; many firms in Sacramento require Associate degrees for electronics technicians; and several firms in Cincinnati require Associate degrees in electronics or electro-mechanical engineering for their technicians. Of the six occupations we examined, such requirements occur almost exclusively in electronics.[31] This kind of policy is established differently for different occupations; for example, a computer networking firm in Silicon Valley whose personnel manager declared that "an A.A. business degree by itself wouldn't buy a whole lot" also requires an Associate degree for its electronics technicians; and the telephone company in Sacramento whose personnel director acknowledged that "a two-year degree really does not make

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[31] The only other case of requiring an Associate degree came in the case of a large Sacramento data processing firm that specifies an Associate degree in computer information science for its operators. Of course, certain health occupations require specific community college credentials.

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someone a better candidate" does prefer that electronics technicians have at least a two-year degree. These technical fields are exceptions, then, to the general indifference toward sub-baccalaureate credentials.

Varied Sources of Training. A second use of formal schooling appears in situations where employers require a certain amount of training regardless of the source, rather than requiring a sub-baccalaureate credential. For example, one high-tech firm in Silicon Valley looks for two years of training, but without differentiating whether it comes from formal schooling, the military or on-the-job training at another firm – it simply sees whether applicants have the requisite capacities regardless of the source.[32] In another example, the director of personnel for a telephone company stated:

> "For our general clerical jobs, applicants must have a two-year degree from either a business college or a community college or experience to be qualified. Those with the educational background aren't really rated higher than those with just clerical experience.
>
> A two-year degree really does not make someone a better candidate than someone who has a work history and no college. We give most of our applicants general aptitude tests; we also give tests in skills such as typing, keying. They just have to meet all the basics. So a two-year degree doesn't really give anyone a higher rating.

As a result of focusing on competencies rather than the source of training, a number of educators acknowledged that sub-baccalaureate credentials do not have any special value as credentials; as the dean of vocational education in a community college near Sacramento acknowledged:

> [Students] get a certificate so they have something to show to the welding [employers] where they really don't care. The industry couldn't care less [about credentials], just so they can do the job. And in the mechanical trades, they don't really care. The manufacturers allow them to have A.A. degrees, but they just want them to have the skills. It's just depending on which particular areas you're talking about. And the reason [the demand for credentials] is high in electronics is because to get the position of technician it is required by the industry to have an A.A. degree. Now when we move into more of the service industry, they won't care.

In all these cases, formal schooling is *one* of the ways to acquire the requisite training. Individuals with community college education will find themselves working alongside individuals without post-secondary education but who learned their skills elsewhere, for example, but they do gain access to these sub-baccalaureate positions through their education. In the process, post-secondary education gives some individuals an advantage over high school graduates who have not obtained the required skills in other ways.[33]

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[32] Occasionally an employer will have strong preferences about the source of training. One, for example, reported not hiring individuals who were trained in the military because of their rigid approach to work, while another preferred military training because it ensured discipline.

[33] In earning equations such as those in Table 1, earnings differentials between those in moderately-skilled positions and unskilled positions will be variously ascribed to experience, to postsecondary education and to military training; but the individual with postsecondary education will have higher earnings that a high school graduate without experience, creating a return to postsecondary education.

Preferences for Community College Education A third role for post-secondary education is that some employers express a *preference* for sub-baccalaureate credentials, that is, an individual with post-secondary education would be hired over an applicant with similar experience without such education – though some experience is still commonly necessary. For example, the manager of a credit union in Silicon Valley said about their management and accounting positions:

> We'd prefer a two-year degree at least. We have made exceptions if they have previous experience. We will occasionally find someone who is an incredible individual, who has no college background and possibly no experience in the financial industry, but has, say, wonderful interpersonal skills. ..... But we usually don't hire someone with absolutely no experience at all.

Similarly, a recruiter for a temporary agency for drafters and other technical workers in the Sacramento area said:

> We do hire those people [from community colleges]. The more education, the better; the more experience, the better. We don't hire for education alone. Job experience is more significant.

In these cases it is clear that experience is the basic requirement and community college education an additional benefit rather than the other way around. However, the preference for community college education means that individuals with such credentials will fare better in the labor market than those with similar experience and training but with less formal schooling.

Because employers will give some preference to applicants with community college credentials, such individuals can often make their way into middle-skilled positions by working their way up from relatively unskilled positions – a process we might call (as many instructors do) the "foot in the door" method of gaining access, or "working up the hard way". As an accounting instructor described it:

> [A firm] will hire someone at a two-year level as the go-fer. It's a good opportunity. They see how the business operates and sometimes get to do some drawing. ..... They get some good experience. If they show some aptitude toward drafting, they might get put on the boards. ..... In fact, I've run across a small number of people who have worked up through the architectural ranks over the years, where you can actually become an architectural engineer by putting in an amount of time – eight years for an architect – which qualifies you to take a test, and if you pass that then you can take the licensing test and go on to become an architectural engineer. That's what we typically call working up the hard way.

In this case, initial positions directly after completing a community college program are unskilled, only with "aptitude," experience and mobility over time do individuals move into middle-skilled positions.[34]

Several employers who value post-secondary schooling indicated that it is a signal of greater motivation and persistence, not necessarily an indicator of better technical skills, since these must be more firm-specific, more specific to particular machines, production processes and firm practices, than

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[34] This kind of process corroborates the conclusion in Grubb (1992b) and other statistical papers that the benefits of sub-baccalaureate credentials do not materialize until after a number of years of accumulating experience and on-the-job training.

educational institutions can provide.[35] For example, a production manager for a plastics fabricator praised community college students in terms that omitted any reference to the quality of education:

> Community college students are really good employees. They went to school and they have demonstrated that they have a certain amount of discipline. They have mechanical aptitude. They have interest and desire as well as lots of other pluses.

Similarly, the director of personnel of a glass manufacturer in Sacramento, a continuous-process manufacturing establishment that places a great premium on stability, commented about the range of post-secondary credentials:

> Stability is looked at real seriously. I think a four-year program may be perceived by employers as being more stable than a two-year program. A two-year program may look easy to achieve versus a four-year program. Getting a certificate does not look as though the person has put forth the effort compared to a degree.

Among those employers who express some preference for post-secondary education in deciding whom to hire, none of them provides a wage differential simply for additional schooling.[36] Therefore, individuals with sub-baccalaureate education can increase their earnings by gaining access to higher-skilled and better-paid positions in the sub-baccalaureate labor market; and their post-secondary education may make them more productive on the job, which will earn them promotion over time; but their post-secondary education will not in itself move them higher up the salary scale. As a manager in a high-tech firm – an individual who serves on the advisory committee of a local community college – remarked about community college education (and indeed post-secondary education in general):

> It comes to the reward that you will get from attending these classes or education. And the answer is zero. You do not get a financial reward for attending any class. You do not get any financial reward for showing proficiency through attendance at educational universities. You do get financially rewarded for performance, which perhaps is enhanced by having a better education. You do get financially rewarded for results, which again may be enhanced by having a broader knowledge of the subject.

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[35] The indications that employers view sub-baccalaureate education as an indicator of motivation and persistence rather than job-related skills is consistent with the statistical results in Grubb (1992) and (1995), indicating that certificates and Associate degrees (but not baccalaureate degrees) are used as signals of ability rather than of intrinsic productivity. While tests of the value of education as a signal of ability rather than a way of instilling the cognitive, manipulative and behavioral capacities that make individuals more productive (as the human capital school has often assumed) are difficult to carry out, the consistency of statistical tests and evidence from employers suggests that a good deal of signaling does go on in the middle-skills labor market.

[36] Among all the employers we interviewed, there was only a single exception: a large insurance company in Cincinnati hired high school graduates into Clerk I and Clerk II positions, while individuals with community college education and Associate degrees were generally hired as Clerk III and Clerk IV. (The next step, to Accountant I, requires a B.A. degree.) The unusual differential for community college graduates may be a result of the fact that the accounting department in this company was especially rigidly structured. "That's the way the bean counters are", reported the director of personnel.

Cyclical Variation in Hiring Practices: Another role for formal schooling comes from cyclical variation in hiring practices. While most employers we interviewed were unable to be precise about their employment policies during the boom times of the 1980s, several employers mentioned that they hired more individuals from sub-baccalaureate institutions during the mid-1980s when unemployment rates were lower. Similarly, an employer in Cincinnati described how hiring standards varied during periods of surplus and shortage:

> [In the mid-1980s] we got [1800 manufacturing] people from a lot of these companies that had gone down. So we raised the bar [i.e. hiring standards] at that point in time based solely on experience, not on education. Now we've got 1,000 people laid off, so it's '80 and '84 people are going away, and all of a sudden we're going to be down to '79s [where the numbers refer to the year hired in a seniority-based layoff system]. If we ever hire again, and some day we will, I keep preaching that the fertile ground won't be there for these skilled people because by the mid-'90s they will have passed through the system, been retreaded ..... and then we're going to have to take people with training as opposed to people with experience.

That is, during periods when a surplus of labor in any particular occupation develops, employers base hiring primarily on experience, but when unemployment goes down and experienced workers are in short supply, employers begin to hire individuals with formal schooling rather than experience.[37]

Licensing and "Organized" Occupations: A final role for sub-baccalaureate education is also one of the most powerful. In a few occupations – most of which are in the health sector – occupations are subject to public regulation through state licensing requirements. These requirements specify the educational requirements for particular occupations, including the duration of programs, the skills that must be taught and the related academic content that must be included. In health occupations, such requirements are binding on both employers and educational providers, since employers must hire licensed health care workers and providers must meet licensing requirements if their students are ever to get jobs. This in turn means that various sub-baccalaureate credentials are *required* for entry in health occupations, providing an obvious explanation of their role in gaining entry to sub-baccalaureate jobs. (Indeed, the fact of requiring such credentials is similar to, though more formalized than, the process of requiring the baccalaureate degree for many professional and managerial jobs.) Of course, it is also possible that these licensing mechanisms restrict entry into these occupations, much as professional licensing in other areas is thought to restrict entry as a way of driving up salaries. In turn, this may explain why the economic benefits of certificates and Associate degrees in health occupations are larger than in other occupational areas (as Table 2 documented).

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[37] Cyclical variation affects education providers as well. Enrollments in community colleges and technical institutes are highly sensitive to the business cycle, expanding during recessions when the opportunity cost of attending school is low and when individuals who have been laid off decide to undertake retraining, and contracting once employment increases again. (See Betts and McFarland 1992, who estimate that a one percentage point increase in the unemployment rate increases full-time enrollment by 4.5% and part-time enrollment by 3.5%.) The cyclical variation in educational enrollments creates a special dilemma: enrollments in community colleges and technical institutes increase just as employment opportunities dwindle. Unless the period of time in such institutions precisely matches the length of the recession, we should expect to see placement rates decline precipitously during recessions and increase during expansions (and similarly, placement rates should be much higher in low unemployment regions than in high unemployment regions). Particularly with the current movement for accountability and performance measures in education, it is important to remember that the standard of "acceptable" employment rates may vary both regionally and cyclically.

The existence of licensing provisions specifying the educational requirements for particular health occupations has yet another consequence: it creates an clear relationship between schooling and employment. The contrast between these *organized* occupations in which required skills have been carefully codified by committees of employers and providers, and markets for other occupations where required skills vary substantially and are not codified at all is striking. In the *unorganized* labor markets typical of sub-baccalaureate occupations, there is much more variation in the skills required among different types of jobs that are identically labeled (as the next section will clarify) and much less consistency in what employers expect from their employees and what educational institutions provide. In contrast to health occupations, where the occupations and their requirements are well-known and the educational programs necessary to enter occupations are unambiguous, students are on their own with little guidance about job prospects and the best ways of qualifying for them.

The Heterogeneity of Qualifications in the Sub-baccalaureate Labor Market. The responses from the employers we interviewed clarified that, when formal schooling affects hiring decisions, it is used in very different ways. Furthermore, formal schooling is only one of the many ways in which workers get the training necessary for these occupations. The varied role of formal schooling in the sub-baccalaureate labor market is corroborated by other evidence, based on surveys of employees undertaken by the Department of Labor in 1983 and 1991 that asked them about the qualifications necessary for their jobs (Eck 1993; U.S. Department of Labor 1992; Bowers and Swain 1994). Individuals with baccalaureate degrees are overwhelmingly in jobs requiring some kind of education or training, since only 16.2 percent report that they need no training. Of those who need some kind of training, the vast majority need formal schooling rather than other types of preparation like formal company training or on-the-job training.[38] At the other end of the spectrum, relatively few high school drop-outs (only 27.8 percent) are in jobs requiring any kind of training at all, and the majority of them require non-school preparation, largely in the form of on-the-job training; only 4.1 percent report that they are in jobs requiring some kind of formal schooling. In these two segments of the labor market, then, there is not much variation in the types of preparation required: most of those in the baccalaureate labor market require formal schooling, and most of those without a high school diploma require no training whatsoever.

However, in the middle there is much greater variety in the kinds of training required. Among those with some college, 35.7 percent reported that their job requires some formal schooling, 27.4 percent required some other kind of preparation – again, largely informal on-the-job training – and 36.9 percent said that no special training was necessary; roughly, then, one third of workers in this group fell into each of these three categories. For high school graduates, slightly over half (53.8 percent) require no preparation at all, while two-thirds of the remainder need informal training rather than formal schooling. Within the sub-baccalaureate labor market, then, the ways of training for occupations vary substantially, and the balance of formal schooling and less formal training (including experience or on-the-job training) is approximately equal, though of course the balance varies from occupation to occupation.

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[38] It is tempting to argue on the basis of these figures that 35.3 percent of college graduates are under-employed, since only 64.7 report that they are in occupations requiring a baccalaureate degree. By this measure, 69.7 percent of those with some college are underemployed, as are at least 85 percent of high school graduates. However, it is quite plausible that many of those with some college education are in jobs for which some postsecondary education is not strictly required – since other forms of training are good substitutes – but for which their formal schooling provided them entry into the job.

Another way to examine the heterogeneity of training in the sub-baccalaureate labor market is to see what proportion of individuals in particular occupations receive formal schooling. For jobs that require a four-year college education, virtually everyone in these occupations has a baccalaureate degree – 95 to 100 percent of high school teachers, 92 percent of speech therapists, 87 percent of dentists, 82 percent of chemists, and the like. However, of the occupations that most commonly use preparation in community colleges and technical institutes, much lower proportions receive this kind of formal schooling: 47 percent of inhalation therapists, 45 percent of dental hygienists, 43 percent of funeral directors, 34 percent of drafting occupations, 30 percent of registered nurses, 25 percent of stationary engineers, 21 percent of electronic repairers, for example (U.S.D.O.L. 1992, Tables 23 and 25). For those occupations for which a baccalaureate degree (or graduate degree) is most common, then, there are usually no other routes into the occupation, but for occupations where sub-baccalaureate education is most common, one-half to four-fifths of workers receive their training in other ways. There are, then, multiple routes into the middle-skilled occupations of the sub-baccalaureate labor market, and formal schooling must compete with many other forms of preparation.

Several characteristics of the sub-baccalaureate labor market make it difficult for individuals to learn about it, and then to make their way into it. To be sure, the fact that most hiring is local may facilitate information about job availability and job requirements. However, the lack of formal hiring criteria, the dominance of relatively small employers without clear personnel practices, the cyclical variation in hiring hindering the development of clear personnel practices, and the dominance of promotion through a "bid and post" system without clear job ladders all make it difficult to see what kinds of careers are available. The conventional notion of a "career" – defined by a clear progression of jobs, from modestly-skilled entry-level positions to those of greater skill, responsibility and earnings – has been replaced (if it ever existed)[39] with careers that individuals have to shape for themselves, that they must construct by moving among positions and among firms. The domination of experience over formal educational credentials in hiring employees also makes it difficult for individuals to know what the value of formal educational credentials is: while sub-baccalaureate education does provide a number of different routes into employment, and does lead to higher earnings (as Table 1 clarified), it does so in different and shifting ways. All in all, the characteristics of the sub-baccalaureate labor market make it more difficult to know how to prepare for entry into many of these occupations, how to find initial employment or what avenues of upward mobility are likely to materialize.

These characteristics also help to explain why the economic returns to sub-baccalaureate education are so uneven. Associate degrees and certificates are much less likely than baccalaureate degrees to be absolute prerequisites for employment, with the exception of health occupations, and a few community college programs (like those in electronics) that have established close working relations with employers, there are few occupations for which community college credentials are absolutely necessary. In addition, the overwhelming preference for experience over formal schooling – because of its greater value in signaling the specific skills and the personal competencies that employers stress – means that formal schooling by itself is rarely sufficient. To be sure, employers often express *preferences* for some post-secondary education, particularly in combination with experience, and the "foot in the door" method of getting into entry-level positions gives some advantages to individuals with community college education. But once again formal schooling is only one of several factors that influence hiring, and individuals without experience, or without the personal characteristics that employers are searching for, find it difficult to compensate with formal schooling alone.

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[39] Kett (1982) has stressed that the movement for vocational education at the turn of the century misappropriated the conception of "careers" – which were then developing in professions like medicine, law and the professoriate – in applying it to blue-collar and working-class occupations where jobs were never ordered in the clear progression that we associated with "careers".

The characteristics of sub-baccalaureate work also clarify why it is so important to find employment related to one's field of study – as the statistical results in Tables 3 and 4 indicate. The strong employer preferences for highly-specific skills – particularly for entry-level jobs, rather than more advanced positions – means that training in another area is not generally valued. Furthermore, the general competencies that an individual might learn in another subject area – academic skills, problem-solving abilities and other SCANS skills, personal competencies like discipline and initiative – are not likely to be considered, at least not until an individual is ready for advancement above entry-level work. The result is that placement efforts, to find individuals employment in the field of their education, is crucial to the economic benefits of community college.

In general, then, the informal and unorganized nature of sub-baccalaureate labor markets helps explain the difficulties students have in navigating through educational institutions and into employment.[40] There are, however, some clear exceptions to this general pattern. One involves health occupations, where licensing enforces uniform practices on educational providers and employers alike, and generates "organized" or codified markets from the informal practices that dominate elsewhere. Another exception comes in cases, like the electronics programs in Sacramento, where community colleges have established programs in close conjunction with local employers, who then provide a ready source of employment as well as advice on the content of education. A third exception, closely related in spirit, involves the co-op programs in Cincinnati; these efforts, combining school-based learning in two-year colleges and work-based learning in firms, establish clear routes from educational institutions into employment, consistent with the smooth transition from school to work envisioned in the current School-to-Work Opportunities Act; and by providing on-the-job experience as well as formal schooling, they enable students to obtain the experience that is so necessary for hiring in the sub-baccalaureate labor market.

4. Developments in Job Training Programs

A different set of job-related training programs has been developing since the early 1960s – one constructed apart from the educational system. This process began with manpower programs during the 1960s, which were then consolidated in the Comprehensive Employment and Training Act (CETA) during the 1970s and reformed in the Job Training Partnership Act (JTPA) during the 1980s. Job training programs are also provided through the welfare system, especially the Job Opportunities and Basic Skills (JOBS) program of the Family Support Act of 1988, which supports job training specifically for welfare recipients. Other special-purpose efforts have proliferated, including those for dislocated workers who become unemployed as a result of economic dislocations beyond their control, like the decline of defence industries or competition from foreign producers. The accumulation of programs at the federal level has generated, according to the General Accounting Office, 163 distinct programs supporting education and job training spending $20.4 billion (U.S. G.A.O. 1995). And many states have initiated their own economic development programs that provide yet other training resources, often intended to lure employment from other areas, facilitate local expansion of employment or prevent employers from leaving the area.

In the development of job training programs independent of schools and colleges, a distinction has emerged between *education* and *job training*. While the difference is not always clear, job training programs are generally much shorter than educational programs, perhaps 10 to 15 weeks long. Second, they are open only to those who are eligible – for example, to the long-term unemployed or dislocated workers in JTPA, or to welfare recipients in welfare-to-work programs – rather than being open to all; they therefore concentrate individuals who by definition have had problems getting into employment. In

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[40] This description is consistent with the view of American labor markets being poorly structured and complicating the transition from school to work , compared to countries like Germany with institutionalized systems (Buechtemann, Schupp, and Soloff 1993).

contrast to the provision of education in familiar institutions – high schools, community colleges and four-year colleges – job training services are offered in a bewildering variety of educational institutions, community-based organizations (CBOs), firms, unions and proprietary schools, making it difficult to determine how services are organized and provided.

While the services provided in education programs are relatively standard and include classroom instruction in both academic subjects and vocational courses, job training programs offer a much greater variety of services including classroom instruction in both basic (or remedial) academic subjects like reading, writing and maths; vocational skill training; on-the-job training, where individuals are placed in work sites; work experience, where individuals work for short periods of time; job search assistance, in which clients are given some training in looking for work, writing resumes, making applications, interviewing for jobs, and the like; and job clubs, in which clients are required to spend a certain amount of time looking and applying for jobs. Job training programs also support placement efforts somewhat more often than educational institutions do, reflecting another division between education and job training: those in educational institutions are likely to declare that they are responsible for "education, not employment", while those in job training are more likely to accept that they have a responsibility for placing individuals as well as training them appropriately. Finally, the goals of education programs generally encompass political, moral and intellectual purposes as well as occupational ends; but job training programs focus exclusively on preparing individuals to become employed. In the case of welfare programs, the goals are to get welfare recipients employed as quickly as possible so they can move off the welfare rolls.

By construction, then, the emerging "system" of job training – really a non-system of programs that have built up over the years – has been independent of the better-developed system of education. However, the creation of a separate system has been unfortunate in several respects. One is that the existence of separate job training and vocational education programs, and the continued proliferation of separate job training programs, has created the sense of having too many programs all doing the same thing. The dominant complaint among policy-makers has been that the proliferation of separate programs leads to overlap and duplication of services – that is, to waste and inefficiency, because many programs are providing essentially the same services to the same clients. In addition, the proliferation of job training programs itself creates confusion about what services are available for what purposes – a confusion that exists among employers as well as among potential clients. As *America's Choice: High Skills or Lower Wages!* described the problem:

> The network of public training activities in the country has thus been created as a result of unrelated education, social, and economic development goals rather than from any overall vision of human resource development. ..... The result is a crazy quilt of competing and overlapping policies and programs, with no coherent system of standardization or information exchange service on which various providers and agencies can rely ..... a maze of sub-systems that are often incomprehensible to those who seek to use them at a local labor market level. (NCEE 1990, pp. 53-54).

Above all, job training programs have been, on the whole, quite ineffective despite thirty years of experimentation with new approaches. While many of them increase employment and earnings for those who have enrolled in them, and have benefits that exceed their costs, the increases in employment and earnings are so small that they cannot hope to lift individuals out of poverty, or allow them to leave welfare. For example, an evaluation of JTPA, the major job training program, with random-assignment methods, found that the program did increase earnings by about $1,000 a year, for both adult men and women, and the benefits outweighed the costs of the program. But job training left their earnings so low – $13,400 among women, and $19,500 among men – that they would still be among the "working poor". Even these results may be generous: a meta-analysis of job training found earnings increases of between $200 and $540 a year (Fischer and Cordray 1996). Furthermore, while these benefits may be

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present for two or three years after enrolling in a job training program, they begin to decline in year four, by five years after enrollment there is typically no difference between those who have enrolled in job training and individuals who have not (Friedlander and Burtless 1995), partly because job training programs often emphasize pushing individuals quickly into employment rather than giving individuals the competencies that would benefit them over the longer run. Even the experimental programs, established with foundation funding and providing more intensive services in carefully-designed programs, have failed to increase earnings substantially.[41] Even in JTPA, which is conventionally thought to be outcome-oriented because of its performance standards and governance by business-dominated PICs, local programs tend to be *performance-driven* but not *outcome-oriented*: they "play to the indicators", concerned with meeting specific performance targets, but ignorant about other dimensions of success – for example, long-term employment prospects or the difference in effectiveness among local providers. The result is that the official performance indicators are completely uncorrelated with the actual effects on earnings (Doolittle et al 1993, p. 10). As a long-run solution to the problems of underemployment, poverty and welfare dependence, then, or as a way into the middle-skilled jobs of the sub-baccalaureate labor market, the second chance programs of the job training "system" are unreliable.

While there are many reasons for the weak results of job training programs, a dominant one is simply that small programs have small effects. The individuals enrolled in job training often have multiple problems and several barriers to employment: they often lack job-specific skills, general academic skills, and the kinds of values (including motivation, punctuality, persistence, the ability to work with others) necessary to find and keep employment; some of them have more serious problems like drug and alcohol abuse, physical handicaps, other health problems, depression and other mental health problems that may be biological rather than experiential. And to remedy these problems, most job training programs are "small" in the sense that they last a very short period of time, rarely more than twenty weeks, and they often provide a single kind of service – on-the-job training, or classroom training or job search assistance – rather than a variety of complementary services for individuals with multiple needs. Job training administrators often take pride in this aspect of their programs: they will say, for example, that they offer "Chevrolet" programs compared to the "Cadillac" programs of educational institutions, by which they mean that they can get to the same destination at much lower cost; they often scorn education programs for being too "academic" and unconcerned with immediate employment. But this attitude masks the profound disjunction between the needs of those who have not found stable employment and the small size of job training programs – and as a result the trivial effects on employment should not be surprising.

A related problem, given the multiple barriers to employment of many individuals, is that job training programs typically provide "one shot" efforts; that is, a particular program is not linked to any other programs, either those with complementary services (like remediation) or those with more advanced training. There are very few mechanisms following individuals through the "system", helping them make transitions among programs, providing them with assistance if they falter or giving them information about the alternatives available. As a result, referral among programs – for example, from JTPA to adult education, or from a JOBS program to a community college – is likely to result in individuals becoming "lost", rather than being an effective method of cooperation – even in welfare-to-work programs, where caseworkers are responsible for tracking individuals. One JOBS administrator lamented sending clients to "the black hole of adult basic education", since the lack of tracking mechanisms meant that the program (like most others) never knew whether the individual arrived at the remedial program, completed the program, made it back into job skills training, completed training and finally managed to find stable employment. In a few communities the dominance of the community college (or, less often, a particular adult school) has consolidated all services in one institution,

[41] For a summary of the job training evaluations see Grubb (1995 or 1996); see also LaLonde (1995) and Office of the Chief Economist (1995).

facilitating tracking and referral among services, and some states (notably Wisconsin) have experimented with "one stop" education and training centers. But such efforts are rare; in most communities, what could be a well articulated system with a continuum of remedial and job-specific education is experienced as a patchwork of disconnected pieces.

Several other problems with job training programs have been caused by the separation of training from education. One is that the basic assumption underlying most job training programs – which have stressed moving individuals into employment quickly, assuming that once individuals get jobs they will remain employed – may be the wrong approach. This tactic assumes that *job finding* rather than *job keeping* is the basic problem,[42] and that there are plenty of jobs available to those who want to work; contrary to education programs, there has been much less attention paid to the problem of enhancing the basic competencies – cognitive, vocational and personal – of job trainees, except in a limited number of intensive and experimental programs. Given the lack of attention to fundamental abilities, it should not be surprising that the long-run effects of job training are so paltry: at best they can urge individuals to be employed more, but they do not prepare them for more skilled and better-paid occupations.

In addition, most job training programs are completely ignorant about issues of good teaching. They almost universally use conventional pedagogical techniques based on "skills and drills", with instructors breaking complex competencies into tiny sub-skills and drilling endlessly on a series of inherently meaningless sub-skills (Grubb and Kalman 1994).[43] While there is evidence that conventional didactic approaches are the least effective methods for teaching many individuals, this approach is likely to be particularly ineffective for the individuals in job training programs. Most of them by construction have not done well in many years of schooling, using conventional didactic instruction; why they should suddenly be able to learn from this approach in very short programs with bad teaching is completely unclear.[44]

There are still other reasons for the ineffectiveness of job training. The quality of job training is suspect: a great deal of on-the-job training is really subsidized employment, with little or no training going on in the majority of programs (Kogan et al 1989), and vocational skills training may suffer from the same kind of problems in keeping up with changes in the technology and the organization of production that affect vocational education. The placement rates in related employment of many job training programs are relatively low, and those who find employment unrelated to their field of training earn less than those with related employment (Grubb 1995). The operation of job training programs by local organizations has made them vulnerable to local political influence, with community-based organizations sometimes supported because of their political connections rather than their effectiveness. And the concentration of those who have been unemployed and on welfare has created a powerful

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[42] For evidence that job keeping is a substantial problem, see Quint, Musick and Ladner (1994).

[43] There are almost surely a few exceptions since the job training world is so large and varied; for descriptions of some of them see Grubb and Kalman (1994). Another one may exist in San Diego (Martinson and Friedlander 1994).

[44] The inability of many job training programs to understand pedagogical issues is reinforced by the problems of hiring instructors. The conditions of providing short-term and intermittent programs, often in community-based organizations with low pay, are not conducive to hiring good teachers. Typically, instructors in job training programs are given little preparation in teaching – a further indication of how little attention is given to teaching. The fact that job training programs have not even raised this question is yet another sign of the unimportance of teaching – and another contributor to the low quality of instruction.

stigma to having been in these programs, so that many employers refuse to hire from them; for all practical purposes, these programs are invisible to employers.[45]

My diagnosis of the problem is that the separation of *training* from *education* has been counter-productive. The real economic rewards are to be found in the educational system, not in job training. As Table 1 illustrates, the rewards to certificates and Associate degrees are much more substantial than the benefits from job training, and sub-baccalaureate education increases earnings over an entire employment history rather than generating benefits that decay after three or four years. The separation may also have worked to the detriment of the education system, of course, which could learn from job training about the importance of performance and outcomes rather than simply enrollments as a measure of success, and about the utility of placement efforts and related support services.

As a result, one way to develop a more effective education and job training *system* would be to recombine them – to link job training with educational programs, using the community college as the conduit between the two to create a more continuous system with a greater variety of services for a broader range of individuals than either one now serves.[46] One way to do this would be to create "ladders" of education and training opportunities, where individuals could enter short-term job training programs, complete them and leave *either* for employment *or* for a more advanced education or training program; those that leave for employment – because many of these individuals need to support themselves, and cannot afford long periods out of the labor force – could then return as their time and circumstances permitted, to continue their education in a more advanced program. This kind of system of linked training and education opportunities could then move individuals from their existing levels of accomplishment to higher levels, where they are prepared for jobs in the sub-baccalaureate labor market of increasing skill, earnings and stability.

Currently, national debates about job training would permit such a system to emerge, though not encourage it. Prompted in part by the evidence about the meagre effects of job training programs (and the negative effects for youth), Congress has proposed cutting funding for these programs. More to the point, a consolidation or merger of several vocational education and job training programs is likely to take place, with states then gaining the ability to make decisions about specifically how these funds are spent.[47] Consolidation will then free states of many federal constraints, and allow them to combine federal funding with state and local funding for education efforts – thereby facilitating the development of a coherent "system" of vocational education and job training. But federal legislation is unlikely to provide any incentives, or requirements or technical assistance to help states move towards such a coherent system. The likely outcome is that 50 individual "systems" will emerge, some of them – in states like Oregon, Wisconsin and Massachusetts that have worked long and hard to develop high-

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45 Public job training programs were not used by any of the 113 employers we interviewed, and several employers reported bad experiences with hiring. For example, a manufacturing firm in Cincinnati reported hiring a single individual straight out of school using the Targeted Job Tax Credit, but complained that "he worked two weeks and was off fifty-two"; the firm was clearly not going to repeat this dismal experience.

46 Currently, two-year colleges provide virtually the only links between the two systems: community colleges and technical institutes often provide vocational training for JTPA and welfare clients, and remediation to these individuals as well as their own students. In some areas the community college is the administrator of JTPA programs, and in a few communities the community college is almost the sole provider of all vocational education, job training and remediation, coordinating the job training and the education system de facto (Grubb and McDonnell 1991).

47 As of this writing the specific programs to be included in a consolidation effort, the extent of federal constraints on the decisions states can make and the specific nature of the state governance structure are all unclear.

quality education and training – quite coherent, while others remain as chaotic and ineffective as the current job training programs are.

5. Conclusions: The Dilemmas of a Market-Driven System

Over the past thirty years, the development of the "system" of work-related education and job training in the United States – really a non-system of poorly-related parts, each established in response to slightly different problems – has been marked by several characteristics:

- There has been more attention paid to the development of components of the "system" – to particular programs, like job training programs, and particular institutions, like the community college – than to the interrelationships among components. While there have been efforts to coordinate elements of the system – for example, to require information-sharing among programs, or to provide funds specifically for collaborative efforts through JTPA – these have been afterthoughts grafted on to institutions that are essentially independent of each other. And these collaborative efforts have typically been confined to subcontracting services from one program to another – for example, subcontracting job training from JTPA to a community college, or giving the responsibility for welfare-to-work programs to local JTPA programs – rather than to constructing hierarchies of opportunities that might take individuals from lower levels of skill to the higher-level competencies that might get them off welfare. The protection of institutional prerogatives (or "turf" issues), the differences in philosophy and the differences in clients have been powerful enough to prevent much collaboration from taking place. The result is that the "system" is disconnected, fragmented, and – particularly for those individuals who gain access through short-term job training and vocational education programs – not especially effective.

- There has been more attention given to enrollments than to outcomes. Funding has typically been driven by enrollments, so that the most powerful economic incentives are simply to increase enrollments regardless of outcomes. There have been no countervailing pressures, and certainly no fiscal motives, for institutions to be concerned with outcomes. Particularly in dealing with academically underprepared students, and those unsure of their purposes – typical of those who show up in vocational and job training programs – it has been easier for institutions to act as large filters, washing large numbers of students into programs and allowing the most motivated and the most determined to find their own way and complete, rather than to take the more difficult and more expensive measures that might be necessary to ensure success among a larger fraction of students. The result has been a "system" that places virtually the entire burden on *students* to find their way among a variety of programs, just as consumers in a marketplace choose among alternatives given their preferences and incomes. But students have not usually been well-informed, their purchasing power has often been inadequate (or inadequate over the long run), and the tactic of using *student* decisions to drive the education and training *system* has resulted in decisions that are probably socially inefficient.

- There has been much more attention given to creating a system of education and training, supplying workers to the sub-baccalaureate labor market, than to developments in the labor market itself. While this supply-side policy is consistent with American conceptions of *laissez faire*, the result is that students at the sub-baccalaureate level generally face unorganized or unmodified labor markets where the value of formal credentials is uncertain, where there are many alternative ways of gaining the necessary skills, where information about skill requirements is poor (especially for positions above entry-level jobs), where jobs are not organized in clear career ladders and where individuals have to construct careers for themselves in alternative ways. There is every reason to be concerned about the progression from school to work since, in this kind of unregulated market, it is easy for students to make mistakes, to prepare themselves for jobs that do not exist or are short-lived, to fail to gain competencies that are necessary for long-run mobility – or simply to be unable to decide what they most want to do, and therefore to mill around aimlessly without making much progress.

To be sure, the glimmerings of a real system have now emerged. Tech prep programs and other articulation mechanisms between high schools and community colleges potentially create linkages between these two levels of the system, in ways that allows students to see the next logical step beyond high school. The similar requirements in the school-to-work legislation also suggest a more general process in which every education and job training program would be connected to the next more sophisticated in a series of offerings – providing a vision of how to create a more coherent system (just as consolidation of many education and training programs will provide states with the authority to create such coherent systems). The early development of performance standards in JTPA, the adaptation of performance measures for vocational programs, the increasing use of student follow-up with Unemployment Insurance data are all mechanisms by which programs are starting to pay more attention to outcomes, rather than being driven solely by enrollments. The development of school-to-work programs incorporating work-based learning and the development of industry-specific skill standards that employers might accept for hiring decisions are both ways of bringing educational providers and employers closer together, rather than having policy operate to develop the supply side of sub-baccalaureate labor markets without any attention to what employers do. These are all steps towards a more institutionalized system of education and job training, away from the *laissez faire* and market-driven system that the United States has had so far.

But the further development of this system will need to fight against some basic American patterns. One, of course, is a political culture driven more by interest group liberalism – by powerful interest groups arguing in their own self-interest – than by any set of principles or overarching goals. The creation of a more coherent "system", necessarily requiring that some programs close and others change their operations markedly, will run up against substantial political resistance, experienced as programs defending their "turf". Secondly, there is the problem inherent in a federal system with a weak central government – indeed, one that is becoming weaker and weaker because the federal deficit makes it virtually impossible to expand federal spending and because of Republican animosity toward federal policy, expressed in current efforts to consolidate federal programs and return power to states. Thirdly, some institutions that are most important in developing a coherent system – particularly community colleges and technical institutes – are largely unaffected by either federal or state policy. And behind all these developments lies the uncertainty of labor market developments, which are beyond the ability of governments to affect. Whether employment continues in the direction of more high-skilled employment, using the higher-order abilities touted by many commission reports, or continues to include a large amount of low-skilled employment, as most forecasts suggest, or moves in the direction of more contingent and contract work with weak incentives for skill development – or whether all three coexist in some uneasy fashion – is difficult to know, though different futures have profound implications for the nature of education and job training.

The crucial issue remains that raised by *A Nation at Risk*. Even though many more factors than the training of the workforce are responsible for the economic position of the United States, there are problems enough with the current education and training system to motivate reform. The question is whether our institutions are capable of the consensus and action necessary to achieve a common goal, or whether individualism, localism and *laissez faire* politics have destroyed our ability to reach for the common good.

References

Andrew, E N and Grubb, W N 1995 "The Power of Curricular Integration Its Relationship to Other School Reforms," in W N Grubb (ed), *Education Through Occupations in American High Schools Vol I Approaches to Integrating Academic and Vocational Education*, Teachers College Press, New York

Baj, J , Trott, C and Stevens, D 1991 "A Feasibility Study of the Use of Unemployment Insurance Wage-Record Data as an Evaluation Tool for JTPA", (Research Report No 90-02), National Commission for Employment Policy, Washington D C

Benson, C 1992 "New Vocationalism in the United States Potential Problems and Outlook", paper presented at the international conference "What Future for Technical and Vocational Education and Training", Melbourne, Australia Berkeley University of California, National Center for Research in Vocational Education

Benson, C and Silver, H 1991 "Vocationalism in the United Kingdom and the United States", Working Paper No 16, University of London, Institute of Education, Post-16 Education Centre, London

Betts, J and McFarland, L 1992 "Safe Port in a Storm The Impact of Labor Market Conditions on Community College Enrollments", paper prepared for the Western Economic Association meeting, San Francisco, California

Bottoms, G and Presson, A 1995 "Improving High Schools for Career-Bound Youth Reform Through a Multi-State Network", in W N Grubb (ed), *Education Through Occupations in American High Schools Vol II The Challenges of Implementing Curriculum Integration*, Teachers College Press, New York

Breneman, D and Nelson, S 1981 *Financing Community Colleges An Economic Perspective*, Brookings Institution, Washington D C

Buechtemann, C F , Schupp, J and Soloff, D 1993 "Roads to Work School-to-Work Transition Patterns in Germany and the United States", *Industrial Relations 24(2)*, 97-111

Cantor Brint, S and Karabel, J 1989 *The Diverted Dream*, Oxford University Press, New York

Cantor, L 1989 "The Re-visioning of Vocational Education in the American High School", *Comparative Education*, 25(2), 125-132

Clark, B R 1960 "The 'Cooling-Out' Function in Higher Education", *American Journal of Sociology*, 65, 560-576

Claus, J F 1989 "Renegotiating Vocational Instruction", *The Urban Review*, 21(4), 193-207

Cohen, A M and Brawer, F B 1989 *The American Community College* (2nd ed), Jossey-Bass Inc Publishers, San Francisco, California

Coley, R 1994 *What Americans Study Revisited*, N J Educational Testing Service, Princeton

Collins, A., Brown, J. and Newman, S. 1989. "Cognitive Apprenticeship: Teaching the Craft of Reading, Writing, and Mathematics", pp. 453-494 in L. Resnick (ed.), *Knowing, Learning, and Instruction: Essays in Honor of Robert Glaser*, Erlbaum, Hillsdale, N.J.

Committee for Economic Development 1985. *Investing in Our Children: Business and the Public Schools*, Author, New York.

Cuban, L. 1990. "Reforming Again, Again, and Again", *Educational Researcher*, 19(1), 3-13.

Doolittle, F. et al 1993. *A Summary of the Design and Implementation of the National JTPA Study*, Manpower Development Research Corporation, New York.

Goldberger, S., Kazis, R. and O'Flanagan, M.K. 1994. *Learning Through Work: Designing and Implementing Quality Worksite Learning for High School Students*, Manpower Development Research Corporation, New York.

Goodlad, J. 1984. *A Place Called School: Prospects for the Future*, McGraw-Hill, New York.

Gray, K. 1991. "Vocational Education in High School: A Modern Phoenix?", *Phi Delta Kappan*, 437-445.

Grubb, W.N. 1992. "Post-Secondary Vocational Education and the Sub-Baccalaureate Labor Market: New Evidence on Economic Returns", *Economics of Education Review*, 11(3), 225-248.

Grubb, W.N. 1993. "The Long-Run Effects of Proprietary Schools on Wages and Earnings: Implications for Federal Policy", *Educational Evaluation and Policy Analysis*, 15(1), 17-33.

Grubb, W.N. 1994a. "The Long-Run Effects of Proprietary Schools: Corrections", *Educational Evaluation and Policy Analysis*, 16(3), 351-356.

Grubb, W.N. 1994b. "School-to-Work Programs: True Reform or Tired Retread?", *Education Week*, August 3.

Grubb, W.N. 1995a. "Response to Comment", *Journal of Human Resources*, 30(1), 222-228.

Grubb, W.N. 1995b. *Education Through Occupations in American High School*, Vol. I: *Approaches to Integrating Academic and Vocational Education*, Vol. II: *The Challenges of Implementing Curriculum Integration*, Teachers College Press, New York.

Grubb, W.N. 1995c. "Coherence for all Students: High Schools with Career Clusters and Majors", in W.N. Grubb (ed.), *Education Through Occupations in American High Schools, Vol. I: Approaches to Integrating Academic and Vocational Education*, Teachers College Press, New York.

Grubb, W.N. 1995d. "The Returns to Education and Training in the Sub-Baccalaureate Labor Market: Evidence from the Survey of Income and Program Participation, 1984-1990", National Center for Research in Vocational Education, University of California, Berkeley, CA.

Grubb, W.N. 1995e. "Post-Secondary Education and the Sub-Baccalaureate Labor Market: Corrections and Extensions", *Economics of Education Review*, 14(3), 285-299.

Grubb, W.N. 1995f. "The Economic Benefits of Sub-Baccalaureate Education", paper prepared for the Association for the Study of Higher Education Conference.

Grubb, W.N. 1996a. *Learning to Work: The Case for Re-Integrating Education and JobTraining*, Russell Sage Foundation, New York.

Grubb, W.N. 1996b. *Working in the Middle: Community Colleges and the Enhancement of the Sub-Baccalaureate Labor Market*, Jossey-Bass Publishers, San Francisco, CA.

Grubb, W.N., Dickinson, T., Giordano, L. and Kaplan, G. 1992. "Betwixt and Between: Education, Skills, and Employment in Sub-Baccalaureate Labor Markets", National Center for Research in Vocational Education, Berkeley.

Grubb, W.N. and Kalman, J. 1994. "Relearning to Earn: The Role of Remediation in Vocational Education and Job Training", *American Journal of Education*, 103(1), 54-93.

Grubb, W.N. and McDonnell, L.M. 1991. "Local Systems of Vocational Education and Job Training: Diversity, Interdependence, and Effectiveness", Santa Monica and Berkeley: RAND and National Center for Research in Vocational Education, University of California, Berkeley, California.

Grubb, W.N. and Stasz, C. 1993. "Integrating Academic and Vocational Education: Progress Under the Carl Perkins Amendments of 1990", U.S. Department of Education, National Center for Research in Vocational Education, for the National Assessment of Vocational Education, Berkeley, California.

Grubb, W.N. and Tuma, J. 1991. "Who Gets Student Aid? Variations in Access to Aid", *Review of Higher Education*, 14(3), 359-381.

Hamilton, S. 1990. *Apprenticeship for Adulthood: Preparing Youth for the Future*, The Free Press, New York.

Hanushek, Eric. 1973. "Regional Differences in the Structure of Earnings", *Review of Economics and Statistics*, 55(2), 204-213.

Heebner, A. 1995. "The Voices of Students", in W.N. Grubb (ed.), *Education Through Occupations in American High Schools*, Vol. I: *Approaches to Integrating Academic and Vocational Education*, Teachers College Press, New York.

Hill, P., Foster, G. and Gendler, T. 1990. *High Schools with Character*, The RAND Corporation, Santa Monica.

Hillocks, G. 1986. *Research on Written Composition: New Directions for Teaching*, ERIC Clearinghouse on Reading and Communications Skills and National Conference on Research in English, Urbana, Illinois.

Kantor, H. 1994. "Managing the Transition from School to Work: The False Promises of Youth Apprenticeship", *Teachers College Record*, 95(4), 442-461.

Kett, J.F. 1982. "The Adolescence of Vocational Education", pp. 79-109 in H. Kantor and D.B. Tyack (eds.), *Work, Youth, and Schooling: Historical Perspectives on Vocationalism in American Education*, Stanford University Press, Stanford, California.

Knapp, M. et al 1995. *Teaching for Meaning in High-Poverty Classrooms*, Teachers College Press, New York.

Kogan, Deborah et al 1989. *Improving the Quality of Training Under JTPA*. Berkeley Planning Associates and SRI International for the U.S. Department of Labor (November 15).

Kozol, K. and Grubb, W.N. 1995. "Paths not Taken: Curriculum Integration and the Political and Moral Purposes of Education", in W.N. Grubb (ed.), *Education through Occupations in American High Schools*, Vol. II: *The Challenges of Implementing Curriculum Integration*. Teachers College Press, New York.

LaLonde, R. 1995. "The Promise of Public Sector-Sponsored Training Programs", *Journal of Economic Perspectives*, 9(2), 149-168.

Lapp, J. and Mote, C. 1915. *Learning to Earn: A Plea and a Plan for Vocational Education*. Bobbs-Merrill, Indianapolis.

Levesque, K.A. and Alt, M.N. 1994. *A Comprehensive Guide to Using Unemployment Insurance Data for Program Follow-Up*. (Grant No. E-94-2-40-59), Institute for the Study of Family, Work, and Community, Berkeley, California.

Lewis, D.R., Hearn, J.C. and Zilbert, E.E. 1993. "Efficiency and Equity Effects of Vocationally Focused Postsecondary Education", *Sociology of Education*, 66, 188-205.

Lotto, L. and Murphy, J.F. 1987. "Access to Knowledge and High School Vocational Education", *Journal of Vocational Educational Research*, 12(3), 39-55.

Manski, C. 1989. "Schooling as Experimentation: A Reappraisal of the College Dropout Phenomenon", *Economics of Education Review*, 8(4), 305-312.

Martinson, K. and Friedlander, D. 1994. *GAIN: Basic Education in a Welfare-to-Work Program*. Manpower Demonstration Research Corporation, New York.

McDonnell, L.M., and Zellman, G.L. 1993. *Education and Training for Work in the Fifty States: A Compendium of State Policies*. (N-3560 NCRVE/UCB), National Center for Research in Vocational Education, University of California, Berkeley, California.

Medrich, E. and Vergun, R. 1994. *Earnings and Employment Outcomes for Postsecondary Degree Holders in Vocational Subject Areas*. MPR Associates for the National Assessment of Vocational Education, U.S. Department of Education, Berkeley, California.

Monk-Turner, E. 1983. "Sex, Educational Differentiation, and Occupational Status: Analyzing Occupational Differences for Community and Four-Year College Entrants", *The Sociological Quarterly*, 24, 393-404.

Monk-Turner, E. 1990. "The Occupational Achievements of Community and Four-Year College Entrant," *American Sociological Review*, 55, 719-725.

National Academy of Sciences 1984. *High schools and the Changing Workplace: The Employers' View*, Report of the Panel on Secondary School Education for the Changing Workplace, National Academy Press, Washington, DC.

National Center for Educational Statistics 1992 *National Postsecondary Statistics, Collegiate and Non-Collegiate: Fall 1991, Early Estimates*, Office of Educational Research and Improvement, U.S. Department of Education, Washington DC

Office of the Chief Economist 1995 *What's Working (and What's Not): A Summary of Research on the Economic Impacts of Employment and Training Programs*, U.S. Department of Labor, Washington DC

Pauly, E., Kopp, H. and and Haimson, J. 1995 *Home-Grown Lessons: Innovative Programs Linking Work and High School*, Jossey-Bass, San Francisco, California

Peterson, G.E., Boybjerg, R.R., Davis, B.A., Davis, W.G., Durman, E.C. and Gullo, T.A. 1986 *The Reagan Block Grants: What Have We Learned?*, The Urban Institute, Washington, DC

Pincus, F.L. 1980 "The False Promises of Community Colleges: Class Conflict and Vocational Education", *Harvard Educational Review*, 50(3), 332-361

Quint, J.C., Musick, J.S. and Ladner, J.A. 1994 *Lives of Promise, Lives of Pain: Young Mothers After New Chance*, Manpower Demonstration Research Corporation

Raby, M. 1995 "The Career Academies", in W.N. Grubb (ed.), *Education Through Occupations in American High Schools, Vol. 1: Approaches to Integrating Academic and Vocational Education*, Teachers College Press, New York

Rehm, M. 1989 "Emancipatory Vocational Education: Pedagogy for the Work of Individuals and Society", *Journal of Education*, 171(3), 109-123

Romberg, T. and Carpenter, T. 1986 "Research on Teaching and Learning Mathematics: Two Disciplines of Scientific Inquiry", in M.C. Wittrock (ed.), *Handbook of Research on Teaching*, Third edition, Macmillan, New York

Secretary's Commission on Achieving Necessary Skills (SCANS) 1991 *What Work Requires of Schools: A SCANS Report for America 2000*, U.S. Department of Labor, Washington, DC

Simon, R., Dippo, D. and Schenke, A. 1991 *Learning Work: A Critical Pedagogy of Work Education*, Bergin and Garvey, New York

Slavin, R. 1987 "Cooperative Learning and the Cooperative School", *Educational Leadership*, 45(3), 7-13

Spence, D. 1986 "Rethinking the Role of Vocational Education", *Educational Horizon*, Fall, 65(1), Fall, 22-23

Stasz, C., Ramsey, K. and Eden, R. 1995 "Teaching Generic Skills", in W.N. Grubb (ed.), *Education Through Occupations in American High Schools: Vol. 1: Approaches to Integrating Academic and Vocational Education*, Teachers College Press, New York

Stern, D., Finkelstein, N., Stone, J., Latting, J. and Dornsife, C. 1995 *School-to-Work: Research on Programs in the United States*, Falmer Press, Bristol, Pennsylvania

Stern, D., Raby, M. and Dayton, C. 1992. *Career Academies: Partnerships for Reconstructing American High Schools*, Jossey-Bass, Inc., San Francisco, California.

Tanner, D. and Tanner, L. 1990. *History of the School Curriculum*, Macmillan, New York.

Tinto, V. 1987. *Leaving College: Rethinking the Causes and Cures of Student Attrition*, University of Chicago Press, Chicago, Illinois.

U.S. Department of Labor 1992. *How Workers Get Their Training: A 1991 Update*, Bureau of Labor Statistics, Bulletin 2407, U.S. Government Printing Office, Washington, DC.

U.S. General Accounting Office 1995. *Multiple Employment Training Programs: Major Overhaul Needed to Create a More Efficient, Customer-Driven System*, Washington, DC.

Villeneuve, J.C. and Grubb, W.N. 1996. *Indigenous School-to-Work Programs: Lessons from Cincinnati's Co-op Education*, National Center for Research in Vocational Education, Berkeley, California.

Wilms, W.W. 1974. *Public and Proprietary Vocational Training: A Study of Effectiveness*, University of California, Center for Research and Development in Higher Education, Berkeley, California.

Wilms, W.W. and Hansell, S. 1982. "The Dubious Promise of Postsecondary Vocational Education: Its Payoff to Dropouts and Graduates in the U.S.A.", *International Journal of Educational Development*, 2(1), 43-59.

W.T. Grant Foundation Commission on Work, Family, and Citizenship 1988. *The Forgotten Half: Pathways to Success for America's Youth and Young Families*, W.T. Grant Foundation, Washington, DC.

Table 1: Effects of Postsecondary Education on Annual Earnings (Individuals 25-64, Survey of Income and Programs Participation Data)

Educational Qualifications	1984 Earnings		1987 Earnings		1990 Earnings	
	Men	Women	Men	Women	Men	Women
Ph.D	.750*	.659*	.676*	.828*	.800*	.881*
	(.074)	(.196)	(.081)	(.220)	(.058)	(.131)
Professional Degree	.953*	1.37*	.806*	1.03*	1.01*	.931*
	(0.55)	(0.15)	(.067)	(.155)	(.044)	(.099)
M.A./M.S.	.435*	.500*	.442*	.646*	.500*	.576*
	(.038)	(.052)	(.045)	(.065)	(.028)	(.038)
B.A./B.S.	.415*	.355*	.394*	.318*	.437*	.428*
	(.026)	(.037)	(.030)	(.043)	(.019)	(.026)
Associate	.184*	.311*	.215*	.234*	.166*	.205*
	(.041)	(.056)	(.044)	(.060)	(.030)	(.037)
Vocational Certificate	.219*	.164*	.146*	.164*	.063*	.219*
	(.067)	(.067)	(.071)	(.075)	(.042)	(.044)
Some College, No Credential						
4 years	.298*	.378*	.256*	-.023	.327*	.409*
	(.078)	(.130)	(.095)	(.178)	(.064)	(.108)
3 years	.215*	.249*	.237*	.240*	.197*	.083
	(.053)	(.098)	(.067)	(.095)	(.044)	(.062)
2 years	.135*	.015	.123*	.062	.069*	.200*
	(.038)	(.056)	(.044)	(.065)	(.028)	(.039)
1 year	.123*	.100*	.161*	.090	.093*	.059
	(.036)	(.049)	(.044)	(.056)	(.029)	(.036)
< 1 year	.120*	.030	.041	.063	.072	.030
	(.052)	(.070)	(.057)	(.080)	(.040)	(.049)
Grade 9-11	-.218*	-.175*	-.265*	-.236*	-.224*	-.220*
	(.030)	(.042)	(.035)	(.053)	(.024)	(.034)
< Grade 8	-.353*	-.358*	-.275*	-.226*	-.276*	-.300*
	(.034)	(.052)	(.043)	(.075)	(.029)	(.046)
N	7982	6557	5452	4952	10,600	9939
R^2	.327	.282	.384	.359	.408	.383

Note: *Significant at 5%, conventional 2-tailed t-test. Standard errors are in parentheses.

Table 2: Effects of Post-Secondary Credentials by Field of Study: 1987

Level and Field of Study	Men	Women
Certificates		
Business	071 (.244) 8	139 (.213) 19
Education	–	621 (.654) 2
Engineering/computers	384 (.282) 6	- 974 (.655) 2
Health	307 (.308) 5	286* (.102) 87
Public service	270 (.262) 7	- 907 (.656) 2
Vocational/technical	101 (.087) 65	074 (.139) 46
Other	187 (.218) 10	133 (.293) 10

Table 2 (cont.)

Table 2 (cont.)

Level and Field of Study	Men	Women
Associate Degrees		
Business	113	.375*
	(.082)	(.112)
	73	71
Education	.286	-.225
	(.397)	(.231)
	3	16
Engineering/computers	.359*	.299
	(.098)	(.377)
	51	6
Health	.093	.369*
	(.218)	(.102)
	10	87
Public Service	.444*	.829
	(.193)	(.464)
	13	4
Vocational/technical	.211*	-.335
	(.092)	(.249)
	58	14
Other vocational	.355	.462
	(.209)	(.462)
	11	4
Maths/science	-.047	.352
	(.208)	(.378)
	11	6
Humanities	.117	.005
	(.145)	(.145)
	23	42
Social Sciences	.326	-.103
	(.209)	(.249)
	11	14
Other	.232	.373*
	(.122)	(.177)
	32	28

Table 2 (cont.)

Table 2 (cont.)

Level and Field of Study	Men	Women
BaccalaureateDegrees		
Business	.503*	.509*
	(.046)	(.096)
	269	100
Education	.126	.153*
	(.091)	(.068)
	61	226
Engineering/computers	.652*	.838*
	(.058)	(.250)
	164	14
Health	.308*	.445*
	(.173)	(.103)
	16	86
Public Service	.247	-.314
	(.168)	(.353)
	17	7
Vocational/technical	.411	-.126
	(.244)	(.532)
	8	3
Other vocational	.343*	.136
	(.108)	(.142)
	42	44
Maths/science	.314*	.572*
	(.081)	(.127)
	75	56
Humanities	.166*	.226*
	(.068)	(.090)
	112	118
Social Sciences	.320*	.513*
	(.064)	(.102)
	128	88
Other	.276*	.141
	(.096)	(.146)
	53	42
R^2	.3912	.3672
N	5452	4952

Notes: Asterisks denote significance at 5%. Standard errors are in parentheses, and the number below that reports the number of individuals with that credential

Table 3: Effects of Postsecondary Education on Annual Earnings for Related and Unrelated Employment (Males, 1990)

	Related Employment	Unrelated Employment	Relationship Unknown	Academic Field
B.A./B.S.	524*	365*	449*	388*
	(.027)	(.033)	(.056)	(.029)
Associate	248*	105*	106	174*
	(.051)	(.048)	(.091)	(.063)
Certificate	039	113	-.018	
	(.059)	(.065)	(.144)	
Some College, No Credential				
4 years	642*	256*	098	240*
	(.127)	(.105)	(.186)	(.114)
3 years	305*	139*	240	153
	(.079)	(.071)	(.172)	(.081)
2 years	201*	-.022	013	064
	(.048)	(.044)	(.081)	(.052)
1 year	228*	069	-.036	056
	(.057)	(.043)	(.084)	(.057)
<1 year	150	033	051	085
	(.084)	(.060)	(.106)	(.080)

Notes: (i) N = 10,601, R^2 = .412

(ii) *Significant at 5%, conventional 2-tailed test. Standard errors are in parentheses.

Table 4: Effects of Postsecondary Education on Annual Earnings for Related and Unrelated Employment (Females, 1990)

	Related Employment	Unrelated Employment	Relationship Unknown	Academic Field
B A /B S	594 (039)	231 (047)	425 (090)	396 (038)
Associate	387* (053)	- 034 (068)	- 073 (122)	231 (080)
Certificate	348* (060)	083 (066)	088* (170)	-
Some College, No Credential				
4 years	522* (187)	322 (197)	545 (587)	334 (179)
3 years	190 (117)	179 (103)	269 (209)	- 177 (110)
2 years	342* (068)	084 (062)	095 (141)	212* (070)
1 year	118* (.058)	- 044 (058)	195 (116)	063 (066)
<1 year	166 (086)	- 170* (077)	129 (158)	138 (099)

Notes: (i) N = 9,940; R^2 = 394

(ii) *Significant at 5%, conventional 2-tailed test. Standard errors are in parentheses.

DEVELOPING A NATIONAL APPROACH FOR VET

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Introduction

History will record this as the golden era of Vocational Education and Training in Australia.

Participation is growing,
Recognition is glowing,
Pathways are going,
Governments are crowing,
Funding is flowing,
Competencies are showing, and
Hopefully, the students are more knowing.

For all that we do not really have a national approach to vocational education and training in this country. We have instead a loose confederation of interests whose collective will is still not producing overall leadership and direction for the sector.

A national approach is desirable if only because of the growing international competiveness of the sector itself, and of the economy. Globalisation is affecting all sectors of the Australian economy, education and training included. This is being recognised by the OECD and UNESCO and both these international organisation are looking to Australia to provide leadership in this sector especially in the Asia Pacific region. Already a number of very important seminars and training programs have taken place here, under the auspices of these organisations. Australia, for example has been heavily involved in UNESO's UNEVOC program.

The quality of an education system in general, and the vocational education and training sector in particular, is also looming as one of the most important factors in investment and location decisions. It is also important because of the growing mobility of Australians particularly in the wake of the severe industry restructuring which has taken place this decade. The important microeconomic reform measures linked to the new federalism process are themselves producing new models of role sharing between governments to achieve national economic and industry goals and the education systems need to mirror these developments. It is now possible to achieve a national approach without eliminating diversity or competition, and without Commonwealth Government dominance. A shared national vision can be attained through partnership and this is as applicable to the VET sector as it is for any other. It is perhaps a more complex challenge for VET if only because of the large number of stakeholders involved.

If we don't have a national approach at present what do we have? There are eight separate and very diverse VET systems in Australia. That diversity is particularly marked in terms of course offerings, participation rates, college location, and articulation and accreditation arrangements. There are eight very diverse models of governance in existence driving each of these systems.

We have tension between schools/VET/universities/and employment. At the peak levels of policy making there is almost a stand-off between these sectors, even if the linkages are closer at the day to day working level and at the institutional interfaces. To some extent this is a reflection of the lack of a clear understanding in this country of the nature and magnitude of the linkages between the economy, employment, education and

training. In turn that relates to the relationship between the outcomes of the education systems and the economy.

Superimposed upon the eight systems we now have Commonwealth growth funding with some attendant policy steerage from the national government. These arrangements have spawned ANTA, a new corporate co-operative model of policy coordination for the sector except that ANTA itself is but one player in the mega policy game, others being MCEETYA and NBEET and DEET itself, not to mention the offices of the Commonwealth and state/territory ministers.

The international linkages for VET in Australia are also dissipated. Each system forges its own working arrangements abroad, with DEET, and to a small extent the new education export body providing linkages and a brokerage role.

The Finn/Carmichael/Mayer reports and their aftermath have demonstrated that national directions can be achieved on focussed objectives in the VET sector particularly with the unified backing of both employers and unions. Although those have been mainly technical changes the National Training Reform Agenda stands as something of a monument to concerted action albeit with Commonwealth funding support.

Perhaps the most disturbing element of the present system is our low level of understanding of the sector itself, with the demographics pushing at our doorstep, school retention rates set to hit at least 85%, the average person changing occupation three or even four times in a working life, only a quarter of school students bound for university, and a concomitant demand for lifelong learning. In all of this our data base is extremely poor and the data we have on enrolments, motivation, choice, and pathways, is certainly not yet adequate to begin statewide let alone nationwide approaches to setting directions.

1. What Needs to be Done?

What are the issues that need to be addressed in VET before a national approach is possible? There are at least four major pillars which need to be established as the foundation. They include research, curriculum, governance, and finance.

1.1 Research

There needs to be a far more substantial national VET research program in Australia. For a start we need much more reliable data on enrolments, and participation rates eliminating what seem to be phantom hours or phantom students in present figures, along with multiple enrolments. We need to identify the factors which are influencing supply and demand for VET including latent demand. The mixture of enrolment between schools and TAFE's needs to be clarified.

The appropriate age for decision making on various pathways in our post compulsory education system must be addressed. Clearly it is too low at present. We cannot expect students to make fundamental choices between paths of literacy and numeracy or so called "academic" and "vocational" paths at the age of 14 or 15.

Closely associated is the issue of counselling, vocational counselling in particular, which is woefully inadequate across Australia. We need not just more counselling but better counselling based on a higher quality research base including options for competencies and aptitudes. In this regard the sector needs to clarify its image and resolve the current identity crisis where it is oscillating between being *an end* in itself through its diploma and certificate courses, and a *means to another end* via articulation and accreditation to Universities.

There is precious little data available on the impact of fees, or rather total costs of courses, on VET participation rates, yet it certainly is a factor. Some VET courses, for example, are believed to be significantly more expensive than University courses.

In reality we still do not have a comprehensive map of all the pathways to and through postcompulsory education in Australia. The full dimension of articulation, accreditation, reverse articulation, and the magnitude of "parking" which is occurring is still really unknown in both its quantitative and qualitative aspects. This reflects the general paucity of longitudinal studies in our education systems. Nor do we know the impact of particular policies within the VET system on supply and demand and residual demand.

Finally the locus of research is as much unknown as the focus. State and Territory Systems seem to pay scant regard for research into their endeavours. There is no critical mass of VET researchers in any capital city. Some has been commissioned and ANTA has begun a research effort, but these are still flimsy efforts for so important a sector to the economy and the education system. The work of the Monash Centre for the Economics of Education and Training becomes important in this light to supplement the work of the National Centre for Vocational Education and Research. The private sector is moribund in research activity, academics with an interest in VET research are very thin on the ground, and the A.R.C. has given next to no encouragement for research in this field.

Clearly there needs to be a critical mass of VET research established. It need not be centralised but it needs some scope and direction.

1.2 Curriculum

Curriculum development in the VET systems is still a mystery, so too who does it and what bodies of literature, theories, concepts of education and learning are the basis. It appears to be highly fragmented and dissipated and a great deal of duplication takes place. VET course accreditation bodies appear to be reactive rather than proactive in curriculum matters. Too much of the curriculum seems to be driven by exogenous forces e.g. the desire for university accreditation and articulation, the need for school capacity to teach VET courses, the highly pragmatic demands of industry, etc.

We need to know a lot more about the various models in existence in different parts of the world especially North America and Europe, notably Germany, and also the progress to date of the New Zealand experience with the seamless or endless web of qualifications en route to vocation. Is a convergence model of school curriculum and VET curriculum practicable for both sectors and can it stand up to the curriculum theory and conceptual framework which underpins each sector? What are the implications for accreditation of teachers? Can the embedding of subject material from both strands into common subjects occur? Do students pursuing highly technical courses need humanities and social science subjects which are modified for their purposes, and vice versa? What of the potential for distance education to enrich curriculum in the VET sector in the light of already promising developments? Could students usefully pursue a joint University degree/TAFE diploma program in the same manner in which they undertake combined University degrees of Arts/Law or Commerce/Law?

And what of assessment? Are the advocates of pure competency based assessment prepared to bend in the light of University, school and parent requirements for normative based assessment, or can all parties agree to some kind of hybrid? Articulation and accreditation through pathways may well hinge on this factor. Then, the key question arises as to how we can best identify which curriculum models, or options, or choices are best suited to particular students. Is it to be horses for courses or some kind of generic curriculum path for as long as possible?

Of course many of these questions have been on hold while the school sector has been grappling with its own national curriculum. But what a pity that this process has not involved more continuous dialogue with the VET sector and its curriculum developers. However one good lesson to come from the school experience is that duplication between systems is not inevitable. Is it possible to have states and territories sharing curriculum development or specialising, trading, and adapting, or even contracting out? A national approach to curriculum development can be achieved in these ways – it does not require a uniform centralised approach. Given the shortage of any critical mass of VET (or even school) curriculum developers in this country, these models become even more attractive. All of the above comments apply equally for curriculum for teacher pre-service and in service, although once again the focal points for the education of VET teachers are hard to locate in Australia.

1.3 Governance

Once the research base is addressed and curriculum issues sorted out it is then time to query whether the structures of governance in the VET system can be designed and mobilised to achieve a national approach to the sector.

At the peak level there needs to be a clarification of roles and responsibilities in relation to VET, between ANTA, DEET, MCEETYA, NBEET, the respective minister's offices, and the export authorities. It is tempting to plump for a shakeout of these bodies for it is an exceedingly complex pattern: the policy making is well and truly split. It is not clear that private providers gain the voice in this policy mélange that they should. The recent review of NBEET revealed a disappointing reluctance of the HEC and the ARC, and some of the board members of NBEET itself, to accept more appointments of VET representatives to their Boards and more research projects on the linkages and interfaces with the VET sector. It seems to be somewhat ludicrous, even hypocritical, for universities to deny formal association with VET at the peak level, when at the institutional level they are articulating and accrediting like there is no tomorrow. The Schools Commission seems to be far more aware of the need for closer partnership. The Employment Skills Formation Council, even given its somewhat dogmatic stance on its own turf, has been dismayed at the elite attitude the academics take towards VET matters. As for the exporters there was some shock and horror when the suggestion was made that Australia's education export institution should be a company, and that the Board should have at least two VET representatives, preferably three, so that private providers would be sure to gain a place.

The answer to this conundrum is beyond the scope of this topic. It needs another careful assessment in relation to roles and responsibilities. However it is doubtful whether a plausible national approach for the VET sector can happen until there is a more formal agreement on the roles and responsibilities of these mega peak bodies and the policy relationships between them. Since each of them reports ultimately to a minister or ministers through different channels, and over three dozen ministers in all are involved, it is not an easy task. This is even more the case if the voices of central agencies in Commonwealth, state, and territory governments are added to the equation. COAG could be the ultimate policy coordinator, but the signs are that COAG does not want to become too sector specific in its own agenda. Nevertheless the principles that underpin COAG are highly relevant to any VET national approach. It will be recalled that they include the Australian nation principle, the subsidiarity principle, the structural efficiency principle, and the accountability principle.

Within individual systems there are issues of governance which also seem to be in need of being addressed. For example, at the beginning of the decade, expectations of TAFE seemed to include:

- traditional provision of industry training functions;
- increasing provision of post-secondary courses, particularly where these are not being addressed by universities and other institutes;

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- support for, and delivery of, courses on demand from the market;
- commercialisation opportunities related to the TAFE skills and infrastructure endowment, including entrepreneurial activity;
- fulfilment of a vital role in the nation's micro-economic reform process, with particular emphasis on knowledge and skills, productivity, export enhancement and import replacement; and
- provision of a fundamental source, and delivery, of equality of opportunity for Australians regardless of location, age, sex, status, or ability.

Now there have always been competing forces impacting upon TAFE systems and each has responded with different organisational forms to try to stream these forces, provide avenues for their resolution, and capture the synergy which they can produce. Some of the tensions appear to include the following:

- The balance between meeting the expectations of industry for training needs, and the need to preserve the integrity and professionalism of the educational process. This balance has markedly shifted in the different systems over time.
- The achievement of sufficient autonomy from government direction to allay suspicions of undue interference in the nature and location of services provided.
- The right relationship between those who manage the system and those who teach in it, especially the relationship between colleges and government departmental management, and between college management and their lecturing staff. In a word, the appropriate devolution/decentralisation regimes.
- The appropriate location of policy-making processes and focuses for the TAFE sector, especially the blend between field experience at the interface and the central focus of overall government policy-making affecting education, industry, and other parts of the public sector and the economy.
- The inevitable tension which arises when private providers wish to enter fields serviced by TAFE colleges or the TAFE system wishes to expand its brief into areas being catered for by private providers, or areas where new opportunities exist which could be serviced by other public or private providers. The principles on which commercialisation of TAFE can occur are a vital element of this equation.
- The need for a clear separation, on the part of government, of its roles in policy-making, provision, accreditation, monitoring, and regulation of this sphere of educational and training activities.
- The achievement of the optimum balance of inputs into curriculum design.
- The achievement of the design of the system in a manner that will best motivate the staff who drive it, especially the lecturers and college principals, and prevent morale being affected by the burden of bureaucracy, inadequate recognition of professionalism, or lack of input into policy-making.
- The exogenous pressures and opportunities which impact upon each TAFE system arising from federal/state and interstate interaction, particularly the scope for complementarity of action between systems.
- The fundamental balance required in all educational systems to cater for the needs of the individual, the society, and the economy.

Not a lot seems to have changed in these aspects over the past five years. Some of the key facts about governance within each system are:

- There are significant differences in TAFE governance in the eight systems in Australia.
- There seems to be general acceptance that TAFE governance requires independent or "stand alone" arrangements from core government machinery.

- Representation, and achieving the right balance, are the key to a driving force for appropriate governance in TAFE, at the central and college level.
- There needs to be considered agreement as to whether TAFE should lead or lag in the development of services in relation to market requirements.
- Various functions provided in TAFE by governments should be more clearly separated, even isolated, e.g. provision, support, accreditation, regulation, curriculum.
- Accreditation and its elements should be handled by a distinguishable separate legal entity with quasi-judicial standing and appeal mechanisms.
- Articulation is vital for modern TAFE systems. Linkages with universities and schools are becoming crucial.
- Various funding methods are possible but they should reinforce the autonomy of the TAFE system.
- TAFE needs resources freedom in capital, revenue, assets, labour, purchasing, etc.
- Reporting arrangements are essential which ensure maximum accountability but linked with autonomy for the TAFE system.
- Devolution to management is essential through contractual arrangements, single-line appropriations, etc.
- Field management is a crucial element of TAFE governance and presents challenges for reform.
- TAFE must have a planning framework, preferably three to five years, either fixed term or rolling.
- Federal/state relations and their rationalisation are a key element of the environment for TAFE. There are a number of principles which apply in this area which can be used for TAFE governance, especially funding.
- Commercialisation and internationalisation are considered to be the way of the future for TAFE, provided a balance is kept with mainstream activity.

Some aspects missing from general discussion or underemphasised in usual TAFE discussions, which probably reflect lack of action on the ground, include:

- research for the TAFE system as a whole and at the college level. It is vital yet it seems thin or non-existent;
- staff development and career planning for TAFE staff;
- professional versus industrial relations arenas for identification and debate of key professional issues. There seem to be few effective professional forums for discussion of TAFE issues. Too much policy emanates from the industrial arenas; and
- not enough focus on the perspective of college principals and lecturers who, after all, are the engine room and driving force of the TAFE systems; in particular, the forms of governance which will best motivate them.

One of the most difficult issues which continues to plague TAFE systems is how to address commercialisation issues. No two systems have a totally common approach to this matter. Some factors worth considering are discussed below.

Virtually all TAFE systems are engaged in some form of commercial activities. Most TAFE systems have amended their charter to a greater or lesser extent to accommodate commercial activities. There are clearly a number of promising avenues for expansion of TAFE commercial activities. Such a move for TAFE would be in accordance with shifts to corporatisation and privatisation in other areas of the Australian public sector. There is recognition that management approaches, styles, and systems need to be varied to handle

commercialisation, and TAFE systems have unquestionably demonstrated their capacity to move into commercial activities of varying kinds and have been highly successful in many instances. However, the culture of commercialisation does not yet seem to have totally permeated the TAFE systems. The overwhelming concern regarding commercialisation is that it may swamp the traditional or mainstream TAFE service provision. This concern that the "tail might wag the dog" is seen most clearly in relation to revenue-raising where colleges are provided with a range of inducements to offer commercial courses, especially the retention of a high proportion of the revenue generated. There is always concern from existing private service providers about the very justification of public intrusion into what they see as their arena and there are difficult choices to be made regarding elements of a level (or tilted) playing field with respect to the private/public providers. These may become particularly acute during shifts from training support to training delivery.

It would seem that, for any full frontal approach to commercialisation, the following factors have to be taken into account. There are undoubtedly others, many of which may apply to particular States or Territories.

(i) The aims and objectives of commercialisation.

(ii) Identification of the activities which comprise core or mainstream TAFE service provision.

(iii) Given current knowledge, the apparent range of activities open for commercialisation.

(iv) Determination of which activities are best left to the private sector alone.

(v) Identification of barriers to commercialisation.

(vi) The organisational structure best suited to dynamic and entrepreneurial TAFE commercial activities including:
- legal status;
- composition of boards, including provision for market/industry representation, professional expertise, staff involvement, etc.;
- relationships with minister and departments;
- relationship with central agencies;
- lines of reporting and accountability, including parliament, auditor, etc.;
- degree of required autonomy in resource management, including capital, human, and physical resources;
- extent of application of normal government policies, e.g. industrial relations, purchasing, contracting, recruitment, discipline, EEO, image, etc.; and
- decentralisation modalities: centre to college units, capital city to regions, CEO to line directors.

(vii) The competitive framework with the private sector, including the required regulatory regime. The balance between government ownership and regulation to achieve the desired outcomes.

(viii) Curriculum design, accreditation, monitoring.

(ix) Articulation potential.

(x) Pricing policies for courses and services.

(xi) Dividend policies.

(xii) Recouping concepts.

(xiii) Need for, and nature of, performance agreements, performance indicators, and performance monitoring. Arrangements which strike a balance between the need for central monitoring and the need for managerial autonomy.

(xiv) Principles for the federal system relating to intersystem and intrasystem competition, complementarity, and co-ordination across Australia.

(xv) Appropriate springboard arrangements for international involvement.

(xvi) Resolution mechanisms for TAFE management required to balance commercial/mainstream activities, with a particular emphasis on the encouragement of morale across the whole TAFE system.

1.4 Funding

Closely related to governance issues are funding issues. The present method of funding of the VET sector closely reflects the constitutional jurisdiction. It also, by the way, fairly closely reflects the theoretical basis of federalism and the associated pattern of intergovernmental relations. In short, the Commonwealth provides a good deal of the growth funding and the systems themselves fund the bulk of the operational activity. The equalisation of the Commonwealth funding is another question – it is somewhat of a nightmare at the moment given the inadequate data base for the sector. The Commonwealth Grants Commission is currently researching the VET sector with a view to identifying policy differences, service delivery, fees and exemptions, supply and location factors, promotion, economic effects and socio-economic influences, and the influence of participation rates in higher education in general. The significance of the sector for equalisation is evident when it is realised that funding now represents 4.1% of the standard budget with a growth rate of 38% over the past 5 years.

The role of the Commonwealth in funding is clearly related to the importance of the VET sector to the economy and the employment market, which is as it should be. It is also true that, given the vertical fiscal imbalance in the Australian federation, the Commonwealth needs to provide special assistance for a function which is clearly in great demand, to the extent that its provision is becoming beyond the fiscal capacity of the states and territories.

Other legitimate roles for a national government in relation to a sector which is constitutionally the responsibility of the states and territories, include catering for:

- mobility of students between jurisdictions;
- portability of qualifications;
- standards of courses and degrees of uniformity;
- accessibility;
- equity;
- universality;
- scale effects; and
- capturing of spillovers.

Of course the eight systems could address these issues themselves, but it is hard to get eight clocks to strike at the one moment. It seems appropriate for the Commonwealth mainly to provide the catalyst for coordinating these issues. Since nine players are paying the piper he will continue to ensure that his tunes are taken from a varied repertoire.

A national approach to the VET sector should be possible under the current funding arrangements. Of course, if the introduction of Hilmer competition policy causes unforeseen effects in the VET sector there may be a need for greater flexibility in funding arrangements. It is to be hoped that the sector will not succumb to the current profile arrangements used for the funding of universities, a recipe for carrots that become sticks overnight.

1.5 A Preferred National Approach

Clearly we need a national approach to the VET sector in Australia which meets a number of criteria. Some would advocate a highly centralised model for both funding and management, others the epitome of decentralisation in both arenas. My own preference is for the middle way, reflecting the realities of constitutional powers, fiscal arrangements, and current location of expertise. Let me suggest a co-operative model for the purpose of discussion, one with the following criteria:

- identifying students as the key element – a client-centred approach;
- meeting national objectives;
- making Australia internationally competitive;
- achieving cooperative management and service delivery between Commonwealth and state/territory governments;
- involving all stakeholders, including private providers and parents;
- clarification of roles and responsibilities in governance at the peak levels and down through the systems;
- identification of core business, commercialisation agendas, competitive rules and the nature of the playing field;
- relevance in curriculum and professional curriculum development;
- efficiency in service delivery;
- meeting overt and latent demand;
- relevance to industry and educational needs;
- reconciling tensions between demands from industry for competence and skills, and resistance from the education community who fear too utilitarian an influence;
- effective linkages and pathways with other parts of education and training, including schools and universities;
- transparency and accountability; and
- generation of research capacity.

Above all else a national approach to VET must maintain the three fundamental factors which have underpinned the successes of the sector to date: relevance to the nation's economic needs; balancing the role of the system in catering for the educational needs of the individual, the society and the economy; and maintaining equity of access, especially for those Australians for whom the VET sector remains their only hope of participation in post-compulsory education.

References

ANTA 1993. *Priorities for 1994: The National Vocational Education and Training System*, Brisbane.

Australian Ministers of Vocational Education, Employment and Training 1992. *Common and Agreed Goals for Vocational Education and Training*, AGPS, Canberra.

Burke, J. (ed). 1989. *Competency-Based Education and Training*, Falmer Press, London.

Collins, C. (ed.) 1993. *The Competencies Debate in Australian Education and Training*, Australian College of Education, Canberra.

Dawkins, J. 1987. *Skills for Australia*, AGPS, Canberra.

Dawkins, J. 1989. *Improving Australia's Training System*, AGPS, Canberra.

Economic Planning Advisory Council 1990. *Towards a More Cooperative Federalism*, AGPS, Canberra.

Finn, B. 1991. *Young People's Participation in Post-Compulsory Education and Training*, AGPS, Canberra.

Kearns, P. and Associates 1993. *A Review of Research and Development Structures and Practices for Vocational Education, Training, and Employment in Five OECD Countries*, NCVER, Adelaide.

Kangan, M. 1974. *TAFE in Australia: Report on the Needs of Technical and Further Education*, AGPS, Canberra.

Laver, P. 1991. "Educating the Clever Country", *Canberra Bulletin of Public Administration*, 67, 44-45, November.

McDonald R., Hayton, E., Gonczi, A. and Hager, P. 1993. *No Small Change*, University of Technology, Sydney, Sydney.

Marginson, S. 1993. *Education and Public Policy in Australia*, Cambridge University Press, Cambridge.

Marshall, N. and Walsh, C. (eds.) 1992. *Federalism and Public Policy: The Governance and Funding of Australian Higher Education*, Federalism Research Centre, Canberra.

NBEET (National Board of Employment, Education and Training) 1989. *New Face of TAFE*, AGPS, Canberra.

NBEET (National Board of Employment, Education and Training) 1991. *Commonwealth Priorities for TAFE Resource Agreements in 1991*, AGPS, Canberra.

NBEET (National Board of Employment, Education and Training) 1991. *Developing Australia's Skills: TAFE in the 1990s*, AGPS, Canberra.

NBEET (National Board of Employment, Education and Training) 1992. *Post-Compulsory Education and Training: Fitting the Need*, AGPS, Canberra.

NBEET (National Board of Employment, Education and Training) 1992. *Change and Growth - TAFE to 2001*, AGPS, Canberra.

Smart, D. 1991. "Higher Education Policy in Australia: Corporate or Coercive Federalism?", *Journal of Education Policy* 6(1), 97-100.

Smart, D. 1990. "The Dawkins Reconstruction of Higher Education in Australia", *Education Research and Perspectives* 17(2), 11-22.

UNICORN 1993. *Training Reform*, 19(4), 4-75.

Wiltshire, K. 1994. *Review of the National Board of Employment, Education and Training*, AGPS, Canberra.

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DIMENSIONS OF VET IN AUSTRALIA

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Introduction

The objectives of the research program in the Centre for the Economics of Education and Training are based on the economic and social outcomes of VET. The main areas we have identified for study are:

- the *changing* demands of the economy and society for VET;
- the macro and micro aspects of the relationship of those demands to the supply of VET;
- efficiency and effectiveness in its provision and distribution; and
- the use of markets and public planning in the funding, provision and distribution of VET.

One of the key requirements for research in these areas is a clear understanding of what vocational education and training is provided and how it is financed. If we do not know what is going on then it is difficult to judge how well VET is responding to the changing demands of the economy, how efficient or effective it is, or how equitably allocated.

This paper concentrates on students and persons in training, and expenditures, and does not deal with efficiency or effectiveness. Nor does it deal in detail with the major policy changes that have occurred in VET, but it provides an overview that is necessary for an understanding of the policy changes. The paper shows that our data sources are not adequate to give more than a rough understanding of some major aspects of VET. It draws on Burke (1995) and Burke, McKenzie and Grauze (1996).

The broader term vocational education and training (VET) is now used rather than Technical and Further Education (TAFE) to refer to the wide range of provision of vocational education and training. However, the *Selected Vocational Education and Training Statistics* which are drawn on below currently apply only to institutions oversighted by public VET authorities and in the main to TAFE institutions. The *Selected Vocational Education and Training Statistics* do not so far include:

- most adult and community providers;
- private providers;
- most formal training provided in the workplace;
- informal on-the-job training;
- most VET in secondary schools; and
- VET higher education.

Some information on these is available in other data sets, especially from Australian Bureau of Statistics (ABS) surveys. Within the data that are available, however, it is not easy to distinguish particular programs, such as labour market programs, which may be provided by TAFE institutes, community providers and private providers.

It is important to note that there are in train many developments to make the VET collections more comprehensive and coherent. The major activity is the work of the Australian Committee on Vocational Education and Training, ACVETS, to develop the AVETMISS, the Australian Vocational Education and Training Management Information Statistical Standard, and to apply it to adult and community education and to private providers.

1. Students and Persons in Training

Table 1 details the overall growth in student numbers in all sectors of education from 1988 to 1994. It shows that:

- Total student numbers increased by about 10 per cent, reaching nearly 5,000,000 in 1994.
- Students in compulsory schooling (up to year ten) grew by 2 per cent to 2,700,000.
- Students in post-compulsory education grew by over 20 per cent to over 2,200,000 (3 per cent in senior secondary schooling, 17 per cent in VET, and 39 per cent in higher education.)
- Students numbers in 'other' institutions (private providers) are shown to have fluctuated, but this is largely due to changes in data scope.

1.1 The Data

Data on students in VET (and Schools and Higher Education) are shown in Table 1 and are from the administrative collections of educational institutions. The introduction of the AVETMISS standard in 1994 has meant that there is not strict comparability between the 1994 VET data and earlier data. The VET data include students enrolled at any time in the year. The nature of the VET collection means that data for 1995 will not be available until well into 1996. Data for schools and higher education are for census dates eg the higher education census date is 31 March. To obtain data at the same point in time the Finn Committee (1991) used data from the ABS May survey of *Transition from Education to Work*. At the time of the Finn Report the ABS estimates for *TAFE* student numbers were only about half the level for the whole year shown in the administrative collections. One reason for the difference between the two estimates is the exclusion from the ABS collection of students not enrolled in May. Also the ABS does not include students who are in streams 2100 to 4500, but who are enrolled *not* with TAFE but with other VET authorities such as the Adult Community and Further Education Board in Victoria.

The introduction of the Australian Bureau of Statistics Classification of Qualifications (ABSCQ) in 1993 and changes to some questions in 1994 have widened the gap between administrative and survey estimates. The ABS now excludes students enrolled for courses with duration of less than one semester full-time and students not studying for a qualification.

Table 2 provides a comparison for 1993 of the two main data sets. The table shows that the ABS point of time estimate for TAFE is only 442,000 compared with the administrative count for VET of 1,121,000.

As discussed, a part of the discrepancy between the TAFE and VET data sets can be explained by the exclusion by ABS of students enrolled for courses of less than a semester or not studying for recognised qualifications (estimated by ABS at 340,000 for 1993). It may be assumed that the large proportion of these are in TAFE. However, the ABS estimate for higher education is greater than the numbers counted in the administrative collection, suggesting that the ABS survey may not be accurately measuring the type of post-secondary institution attended. About 85 per cent of VET students are part time and some are in very short courses; it is these courses on which the collections differ most.

Table 1: Students '000s, Australia, 1988 to 1995

	School* to Year 10	School* Years 11 and 12	VET*	Higher Education*	'Other'#	TOTAL
1988	2651	372	952	421	110	4505
1989	2659	372	932	441	131	4536
1990	2665	376	967	485	151	4645
1991	2677	398	986	535	134	4730
1992	2692	407	1043	559	163	4863
1993	2701	398	1121	576	122	4917
1994	2716	384	1118~	585	88	4891
1995	2738	372	na	604	127	na
1988 to 1994	2%	3%	17%	39%	-20%	9%**

Source: ABS, *Schools Australia*, Cat. No. 4221.0.
ABS, *Transition from Education to Work*, Cat. No. 6227.0.
DEET, *Selected Higher Education Statistics*.
NCVER/ACVETS, *Selected Vocational Education and Training Statistics*.

Notes: * Statistics from administrative collections, not survey data.
Survey data: changes in collections affect especially 1993 and 1994.
VET data relate to students in streams 2100 to 4500 enrolled at any time in the year.
~ The introduction of AVETMISS in 1994 affects comparability of VET data over time.
na Not available.

Table 2: Alternative Estimates of VET Student Numbers, Australia 1993, '000s

	Data Source	15-19	20-24	25-64	Total
TAFE Total	*ABS May Survey*	148	112	182	442
VET Total	ACVETS/NCVER	258	210	654	1121

Source: ABS, *Transition from Education to Work*, Cat. No. 6227.0.
NCVER for ACVETS, *Selected Vocational Education and Training Statistics*.

1.2 Growth in VET

Table 3 gives some further information on the growth in public VET institutions as measured by ACVETS/NCVER. It shows that growth in the period from 1988 was concentrated in the period 1991 to 1993. The table shows:

- high growth in Basic Education, Employment Skills and Educational Preparation (stream 2000),
- high growth for courses for Operatives (stream 3100), and
- low growth for the trades and other skills courses (3200).

Within streams 3300 to 3600 growth has been very high in stream 3500 (Para-professional, Higher Technician). The average student contact hours in stream 3500 are nearly twice the average for all streams. The result, as shown in Table 4, is that streams 3300 to 3600 had an expansion of student contact hours of over 50 per cent compared with the overall average of 22 per cent. Streams 3300 to 3600 now account for over a third of all contact hours. Note also that the hours for stream 3100 (Operatives) grew by 36 per cent, faster than the overall student numbers. The growth in these streams, involving greater number of hours, contributes to the growth in total VET hours of 22 per cent, compared with the growth in student numbers of 17 per cent.

Table 3 shows an estimated 556,000 students in 1994 in Stream 1000 (Recreation, Leisure and Personal Enrichment). Stream 1000 includes, in some State data, courses conducted in Adult, Community and Further Education – which as noted also provides courses in Streams 2100 to 4500. The average contact hours per student is 18 in Stream 1000, compared with an average of about 240 for students in Streams 2000-4500.

Table 5 shows that growth has been concentrated among 20-24 year olds and among those aged 30 and over. The small growth in the number of 15-19 year olds represents a combination of a slight rise in the age participation rate offset by a fall in the population of 8 per cent in this age group. A substantial part of the increase in numbers of students aged 20-24 year olds is accounted for by a population increase of 9 per cent in that age group. Because of the low number of births in the 1970s, projections of VET enrolments based on the assumption of constant age-participation rates show little change in total numbers and some sizeable differences among age groups. Growth in VET will come from increased participation rates, not from population pressures.

There have been changes in the distribution of students by field of study in recent years. TAFE adopted a new classification of field of study in 1990 so only recent changes are clear. The largest field of study is 'Business, Administration, Economics' which has shown above average growth and now accounts for over a quarter of all TAFE students in Streams 2000 to 4500. Engineering and Building fields stagnated in the recession of the early 1990s, which led to a sharp fall in new apprenticeships. The statistics for Land and Marine Resources, Animal Husbandry have shown a remarkable rise in recent years and this warrants further investigation.

Vocational education has been expanding rapidly in the final two years of secondary schooling. Many of the programs involve dual recognition for credit for both school and TAFE qualifications (Sweet 1995; MCEETYA 1994). Many of these courses involve industry placements. Ainley and Fleming (1995) estimated that about half Australia's secondary schools offered programs in 1995 involving some workplace learning and that about 9 per cent of students participated in the programs. An indicator of the rapidity of growth is that about half of the programs identified were started in 1995. There are, in addition, the vocational programs that do not involve industry placement. A stimulus to the recent expansion was the introduction under *Working Nation* (Keating 1994) of the Australian Student Traineeship Foundation which is funded to support best practice workplace learning partnerships to develop recognised academic skills and vocational competence.

Table 3: VET Students by Stream '000s, 1988-1994

	Entry Level	Initial Vocational			Subsequent to initial	Total	Net Streams	Recreation etc
Stream	2000	3100	3200	3300-3600	4000	2100-4500	2100-4500	1000
1988	247	195	280	244	118	1084	952	533
1989	258	180	263	209	102	1012	932	584
1990	206	214	271	233	114	1037	967	539
1991	245	221	275	238	120	1099	986	585
1992	273	231	278	259	130	1171	1043	701
1993	313	251	295	278	136	1273	1121	661
1994	309	236	315	284	132	1277	1118	556

Source: NCVER for ACVETS, *Selected Vocational Education and Training Statistics*

Stream 1000: Recreation, Leisure and Personal Enrichment.
Stream 2000: Entry to Employment or Further Education.
Stream 3100: Initial Vocational Courses: Operatives.
Stream 3200: Initial Vocational Courses: Skilled.
Stream 3300: Initial Vocational Courses: Trade Technician/Trade Supervisory or equivalent.
Stream 3400: Initial Vocational Courses: Paraprofessional-Technician.
Stream 3500: Initial Vocational Courses: Paraprofessional -Higher Technician.
Stream 3600: Initial Vocational Courses: Professional.

Table 4: VET Student Contact Hours, Millions, 1988-1994

	Stream 2000 Entry Level	Stream 3100 Operatives	Stream 3200 Skilled	Streams 3300-3600 Tech./Para-Professional	Streams 4100-4500 Post Initial	TOTAL Streams 2100-4500
1988	45	22	80	68	9	223
1990	35	22	72	68	7	205
1992	49	28	72	88	8	246
1994	56	30	76	103	9	273

Source: NCVER for ACVETS, *Selected Vocational Education and Training Statistics*

Table 5: Net VET Students by Age ('000s, Streams 2100 to 4500, 1988 to 2001)

	19 and under	20-24	25-29	30+	Not stated and bulk	Total
1988	255	166	119	341	71	952
1989	254	156	110	318	95	932
1990	275	170	115	344	63	967
1991	241	185	121	372	67	986
1992	240	198	124	393	86	1043
1993	258	210	127	435	92	1121
1994	251	212	127	434	94	1118
Projection assuming constant 1993 age-participation rates						
1996	252	202	131	452	92	1130
2001	263	189	132	480	92	1157
Change 1988 to 1994	-2%	28%	7%	27%	33%	17%
Change 1994 to 2001	5%	-11%	4%	11%	-2%	3%

Source: NCVER for ACVETS, *Selected VET Statistics*

Table 1 indicated that in 1995 about 127,000 persons were taking courses in 'other' educational institutions. This figure is for the number enrolled in courses that lead to a recognised qualification and which take a semester to complete. Another 80,000 were estimated by ABS to be taking courses that do not meet these criteria.

Some insight into this has been given in a recent survey by the ABS of *Commercial Training Providers*. The survey addressed private organisations delivering VET on a commercial basis. It excluded TAFE institutes, universities, schools, and Skillshare organisations (semi government/community organisations that mainly provide labour market programs). It does not cover businesses which provide training not on a commercial basis only for their own employees. They delivered 58 million student contact hours compared with 273 million by public VET organisations (as shown in Table 3 for Streams 2000 to 4500). The survey showed that only 6 per cent of courses conducted by commercial training providers had been accredited by State authorities. Among the courses delivered by private providers are the off-the-job component of traineeships, funded by the Commonwealth government, and Commonwealth labour market programs for which private and public providers may tender. To further the policy of promoting a competitive training market (see Anderson 1996) State training authorities, which fund TAFE, are moving towards allocating up to 20 per cent of their operating revenues for competitive tender among public and private providers.

A still broader indication of the scope of education and training is given in the ABS survey of training and education experience in 1993. Table 6 provides some brief data on those employees receiving formal training either in-house or externally. Much of the external and some of the in-house training is provided by commercial training providers just discussed and a small proportion by TAFE institutes. A more detailed table is given in the appendix (Table A1).

Table 6: Wage and Salary Earners Receiving Training, Australia, 1993

	% Receiving Training	
	In-House	**External**
Total	31	12
with post-school qualifications	41	17
without qualifications	23	7

Source: ABS, *Training and Education Experience, Australia* 1993. Persons can undertake more than one type of study or training.

About 2,200,000 wage and salary earners in 1993 (or 31 per cent of all employees) undertook in-house training courses and around 840,000 (or 12 per cent) undertook external training courses. That is, the number taking in-house courses is much larger than student numbers in public VET institutions. The hours of training in these courses are small by comparison with most TAFE courses: McKenzie and Long (1995) report from their analysis of this data set that on average full time employees took 23 hours of training in 1993.

In summary:

- 48 per cent undertook some formal study or training in the twelve months prior to the 1989 survey and about the same percentage in 1993;
- a much larger number undertook on-the-job training, with the percentage increasing from 72 per cent in the 1989 survey to 82 per cent in 1993;
- the proportion *studying* (at say TAFE or Universities) increased slightly between 1989 and 1993 to 19 per cent of wage and salary earners;
- the proportion taking externally funded training grew from 10 per cent to 12 per cent; and
- there was a decline in the proportion taking in-house courses of training from 35 per cent in 1989 to 31 per cent in 1993.

More persons with post-school qualifications undertook formal education and training than those without qualifications, the gap being most marked in relation to external training courses. A smaller proportion of wage and salary earners born in non-English speaking countries than of those born in English speaking countries received training.

The gap between the proportion of female and males receiving some training is small, with females slightly ahead. However females tended to receive shorter courses than males – a smaller proportion of females than males received in-house or external courses lasting 40 hours or more. Proportionately more young workers undertake study and formal training and more receive on-the-job training. A noticeable increase from 1989 to 1993 is in the proportion of 20-24 year olds undertaking study – in keeping with the increased enrolment of students aged 20 to 24 in higher education and TAFE discussed above.

The ABS survey in 1993 provided some information on the training and education experience of employers, self-employed, unemployed and persons marginally attached to the labour force.

- about 36 per cent of the unemployed reported undertaking study or training courses, compared with 47 per cent of wage and salary earners;
- the access of the unemployed to informal on-the-job training was much smaller than for wage and salary earners;
- the proportion of employers and self-employed studying or undertaking training courses was much lower than for wage and salary earners, though their level of on-the-job training appeared to be quite high; and
- marginally attached persons (those who would like a job but are not classified as unemployed) have a low level of formal training and a low level of informal training.

The proportion of the unemployed undertaking training expanded in the wake of *Working Nation* (Keating 1994), which increased the range of programs for the unemployed, led to the introduction of the training wage, more active promotion of the programs and extended case management of the unemployed. DEET recorded over 500,000 commencements to its employment access programs in 1993-94 and in 1994-95 (DEET 1994 p 135; 1995 p 173). In 1993-94 over 300,000 of the commencements were from among those unemployed 12 months or more. As mentioned, the Commonwealth government puts many labour market programs out to tender and both public institutions such as TAFE and private providers deliver the programs.

2. Expenditures

Data have been compiled for ACVETS (1995) on the revenue of public Vocational Education and Training institutions and some major features are given in the appendix, Table A3. In 1993 about 86 per cent (89 per cent in 1989-90) of the total revenue of public VET institutions was received from government and the remaining 14 per cent from fees, charges and other sources. The major change in funding is the increase in the Commonwealth's share from 20 per cent in 1990-91 to 26 per cent by 1993. Fee for service, a substantial proportion funded by Commonwealth labour market programs, has risen from 3 per cent to 7 per cent of revenues. Student fees have remained at 3 per cent of revenues. The VET data on expenditure and students and price changes are not yet adequate to estimate reliably the trends in real funds per student or per student contact hour. For the three and a half years to 1993 government funds increased 12 per cent in constant prices, student numbers increased about 18 per cent and student contact hours grew 30 per cent. There thus appears to be a decline in government funded resources per student contact hour up to 1993.

The increase in the numbers of senior secondary school students taking vocational courses means that some part of the outlays on schooling could be treated as VET expenditures in any comprehensive analysis of expenditures. This could be a substantial sum.

Table 7 gives a view of public TAFE expenditures in relation to higher education expenditures, based on ABS data. It is interesting to note that recurrent expenditure on TAFE appears to have expanded faster than in higher education , despite the faster growth in students in higher education.

Table 7: Government Outlays on TAFE and Universities ($ 000 million)

	Government Outlay on:									
	TAFE					Universities				
Year to June	Cons	Capital	Benefits	Other	**Total**	Cons	Capital	Benefits	Other	**Total**
1988	1.19	0.25	0.08	0.01	1.52	2.36	0.28	0.37	0.01	3.00
1994	1.95	0.25	0.24	0.04	2.48	3.61	0.36	0.74	0.64	5.35
Increase										
Nominal	64%	-1%	195%		63%	53%	26%	100%		78%
Real	33%	-20%	138%		31%	23%	2%	61%		44%

Source: ABS, *Expenditure on Education*, Cat No 5510.0
Note: "Cons" means government consumption expenditure or operating expenditure.

The explanation lies in the 'other' column, where Commonwealth outlays to support the Higher Education Contribution Scheme (HECS) 'loans' are recorded. In the short term the Commonwealth is still bearing most of the cost of HECS. As HECS repayments rise the net figure in this column will fall. The data on student benefits – mainly AUSTUDY – show a very rapid growth for TAFE.

Employer expenditure on training was surveyed by ABS in 1989, 1990 and in 1993, followed by a survey of employer training practices in 1994. Total expenditure for the July to September quarter in 1993 was $1.1 billion or 2.9 per cent of gross wages and salaries compared with 2.6 per cent in 1990 (shown in Table 8). The employer expenditure equals about 1 per cent of the GDP. Of this expenditure on training nearly half (46 per cent) represents expenditure on the wages and salaries of those undertaking training and just over half the cost of trainers and other expenditure. Employer expenditure on trainers and other training expenditure (excluding wages and salaries of the trainees) is nearly as large as government grants for VET.

The employer expenditures represent $192 per employee for the three months July to September 1993 (or over $750 *per year* per employee). Expenditure per-employee-who-received-training is much higher. The ABS expenditure survey did not provide an estimate of the numbers being trained, but the ABS survey of training and education discussed earlier showed about 31 per cent of wage and salary earners had received in-house training. In-house training absorbed nearly 70 per cent of all training expenditure in 1993, so a rough estimate of expenditure per employee receiving in-house training would be $1500.

These aggregate estimates of employer expenditure at best provide an indication of the dimension of training. They are useful in indicating the level and broad types of training undertaken by firms of different size in various industries. Even in this regard they provide only partial estimates for the whole labour force as, for example, they do not include expenditure on the self employed.

Table 8: Employer Expenditure on Formal Training, Australia, July-September 1993

Total Training Expenditure $ million	1109
% of Gross Wages	2.9%
in-house training	2.0%
external training	0.9%
% of Employers Reporting Training Expenditure	25%
Training Expenditure per Employee $	192
Private	163
Public	263
Number of employees – million	5.77
Private	4.13
Public	1.64
Hours per Employee	5.6

Source: ABS, *Employer Training Expenditures*

A very important source of learning was explicitly not considered in the Training Expenditure Survey:

> Informal training is excluded from the scope of this survey. That is, any unstructured on-the-job training, being shown how to do things as the need arises, learning by doing a job (ABS Cat. No. 6353.0, p.34)

Over 82 per cent of wage and salary earners indicated that they received on-the-job training. The fact that we can measure expenditure on education and on structured training should not lead to the neglect of the importance of on-the-job training and the means of fostering it.

Government expenditure on labour market programs approximates about 0.5 per cent of GDP (DEET 1994). The estimated expenditure on training in labour market programs in 1993-94 was nearly $1.2 billion as shown in Table A2. This is equal to over half the total expenditure on labour market programs. Expenditure on such programs more than doubled in the two years after 1990-91.

Another indicator of the size of the provision of education and training is the number of staff in the various sectors. Over 200,000 teachers (full-time equivalent) are employed in schools. About 20,000 full-time teachers (and large numbers of part-time teachers) are employed by VET authorities and over 30,000 are employed in universities.

These numbers of teachers in formal education can be viewed in relation to the recent estimates by ABS of the number of persons in other sectors who are engaged in the provision of training. About 600,000 employees report spending part of their time in providing training, with 28,000 spending most of their time on training (see also Allen Consulting 1994). These data need closer analysis, but they do indicate the great numbers involved to some extent in training.

3. Observations

This paper has reviewed the size of the student or client numbers in VET in Australia and the associated expenditures. Data is scant in a number of areas and improvement in data is a major concern for government authorities. However it is possible to make a number of observations.

- Most VET students or clients undertake training part-time, some in very short courses.
- 1,100,000 (in streams 2000 to 4500) are enrolled for courses in publicly owned VET institutions.
- Within public VET institutions there has been a relative growth in business courses and in technician/supervisory/para professional level courses.
- 2,200,000 wage and salary earners participated in in-house training courses in 1993.
- 840,000 wage and salary earners participated in external training courses in 1993.
- Over 500,000 persons in 1994-95 commenced government labour market programs, about half of which have a notable training component.
- There is a substantial and growing provision of VET in secondary schools.
- There is an unknown level of provision of (non-higher education) VET in higher education.
- Public and private VET providers compete for government labour market programs, an increasing share of all public funds for VET, external courses for industry and for some in-house courses.
- States have the primary responsibility for the public finance of VET, but the Commonwealth's share has grown and is approaching 30 per cent of revenue.
- The annual revenue of public VET institutions exceeded $3.2 billion in 1994 (about 0.75 per cent of GDP), about 80 per cent from government general purpose grants and some additional government funds from specific grants and fee-for-service activities.
- Private expenditures on public VET institutions make up over 10 per cent of revenue.
- The client contact hours delivered by commercial training providers is about 20 per cent of that delivered by public VET institutions.
- Employer expenditures on VET in 1993 are estimated to have exceeded $4 billion.
- About half the employer expenditure was on the wages of employees while in training and about half for the provision of training.
- Recent expenditures on training in labour market programs have been estimated to exceed $1 billion.
- Over 600,000 employees outside the public education and training system are reported to spend part of their time on the provision of training.
- Private provision of VET, including in-house provision by employers and various public and community provision *not covered by the VET Statistics collection*, may exceed that in public VET institutes.

References

Allen Consulting 1994. *Establishing an Effective Australian Training Market*, Report to Office of Training and Further Education, Melbourne.

Anderson D. 1996. "Reading the Market: A Review of Literature on the VET Market in Australia", Working Paper No. 5, Monash University-ACER Centre for the Economics of Education and Training, Monash University, Melbourne.

ABS (Australian Bureau of Statistics) 1996. *Commercial Training Providers Australia, 1994*, Cat. No. 6352.0.

ABS (Australian Bureau of Statistics) 1995. *Transition from Education to Work Australia May 1995*, Cat. No. 6227.0.

ABS (Australian Bureau of Statistics) 1995. *Expenditure on Education Australia 1993-94*, Cat. No. 5510.0.

ABS (Australian Bureau of Statistics) 1994. *Employer Training Expenditure Australia July-September 1993*, Cat. No. 6353.0.

ABS (Australian Bureau of Statistics) 1994. *Employer Training Practices Australia February 1994*, Cat. No. 6356.0.

ABS (Australian Bureau of Statistics) 1994. *Training and Education Experience Australia 1993*, Cat. No. 6278.0.

Australian Committee on Vocational Education and Training (ACVETS) 1995. *Collection of National Financial Data on Vocational Education and Training*, Canberra Institute of Technology, Canberra.

Burke, G. 1995. "Dimensions of Education and Training: Australia from 1988", in NBEET, *The Demand for and Dimensions of Education and Training*, AGPS, Canberra.

Burke, G., McKenzie, P. and Grauze, A. 1996. *Review of Statistical Data for Research on VET*, Report of a Working Group to the Australian National Training Authority Research Advisory Council, in press.

DEET 1994. *Annual Report 1993-94*, AGPS, Canberra.

Keating, P. Prime Minister 1994. *Working Nation*, AGPS, Canberra.

Ministerial Council for Education, Employment, Training and Youth Affairs (MCEETYA) 1994. *National Report on Schooling in Australia 1993*, Curriculum Corporation, Melbourne.

McKenzie, P. and Long, M. 1995. "Educational Attainment and Participation in Training", *Efficiency and Equity in Education Policy*, NBEET and CEPR Conference, Canberra, September.

National Centre for Vocational Education Research (NCVER) for ACVETS. 1995. *Selected Vocational Education and Training Statistics 1994*, Adelaide.

Sweet, R. 1995. *An Overview of School to Work Arrangements in Australia*, OECD, Paris.

Table A1: Wage and Salary Earners: Training in Australia, 1989 and 1993

	Study or Training Courses Undertaken								On-the-job		Some training undertaken		No training undertaken		Total wage and salary earners	
	Studied		In-house		External		Total*									
	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993	1989	1993
Total number, 000s	**1124**	**1316**	**2338**	**2214**	**658**	**836**	**3205**	**3324**	**4814**	**5792**	**5300**	**6072**	**1405**	**1007**	**6705**	**7079**
	Per cent of wage and salary earners															
All persons	17	19	35	31	10	12	48	47	72	82	79	86	21	14	100	100
with post-school qualifications	17	20	44	41	15	17	56	56	76	86	84	90	16	10	100	100
without qualifications	16	17	27	23	5	7	40	39	68	78	75	82	26	18	100	100
males	17	18	35	31	10	12	49	46	71	81	79	85	21	15	100	100
females	17	19	35	32	9	12	47	48	73	82	79	86	21	14	100	100
Born not in main English speaking countries	14	14	25	23	7	8	37	35	63	75	70	78	30	22	100	100
Age 15-19	54	57	23	14	6	6	65	63	91	92	96	96	4	4	100	100
Age 20-24	29	35	34	27	8	9	54	54	86	90	91	94	9	6	100	100

Source: ABS Cat No 6278.0.

Note: * persons can undertake more than one form of training.

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Table A2: Expenditure on Labour Market Programs Involving Training

$ million current prices

	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94
Integrated Training (a)	148	188	166	147	209	522	543
Off-the-Job Training (b)	84	124	149	211	308	525	497
Labour Adjustment Assistance (c)	13	16	12	11	29	57	71
Aboriginal Employment and Training	72	83	79	85	96	39	44
Total	318	410	406	454	642	1143	1155

Source NBEET, *Making the Future Work*, 1994.
Commonwealth of Australia, *Budget Paper*, Number 1, DEET, *Annual Report*

Notes Changes in classification mean that detailed analysis will be needed to make 1994-1995 comparisons

(a) Integrated training refers to combined on and off the job training. It includes apprenticeship and traineeship support, JOBSKILLS and LEAP

(b) Off-the-Job training includes JOBTRAIN, 75 per cent of Skillshare from 1988-89, SIP, and Accredited Training for Youth

(c) Includes programs to assist those displaced by tariff cuts.

Table A3: Vocational Education and Training in Public Institutions
(Revenue, $ million, Australia)

	Net State	Common-wealth		Fee for Service	Student fees	Other		Total Revenue
1989-90								
Recurrent and Operating	1558	283		85	71	113		2109
Capital	121	199		0	0	2		322
Total	**1678**	**482**		**85**	**71**	**115**		**2432**
1990-91								
Recurrent and Operating	1681	310		100	83	109		2285
Capital	140	221		0	0	2		363
Total	**1821**	**531**		**100**	**83**	**111**		**2648**
1991-92								
Recurrent and Operating	1788	378		153	95	122		2536
Capital	104	213		0	0	10		327
Total	**1893**	**591**		**153**	**95**	**132**		**2863**
1992								
Recurrent and Operating	1792	437		152	98	115		2593
Capital	113	220		0	0	7		341
Total	**1905**	**657**		**152**	**98**	**122**		**2934**
1993								
Recurrent and Operating	1828	619		219	102	130		2898
Capital	130	220		0	0	5		355
Total	**1957**	**839**		**219**	**102**	**135**		**3253**
Revised Collection	**State**	**Common -wealth General Purpose**	**Common -wealth Specific**	**Fee for service**	**Student fees**	**Ancillary Trading**	**Other**	**Total Revenue**
1994								
Recurrent and Operating	1851	400	121	281	111	73	35	2872
Capital	133	221	0	0	0	0	0	353
Total	**1984**	**620**	**121**	**281**	**111**	**73**	**35**	**3225**

Source: ACVETS, Collection of National Financial Data on Vocational Education and Training; ABS, *Australian National Accounts*.

Notes: PGCE is the deflator for all government consumption expenditure, adjusted for calendar years. In the 1994 collection data on Commonwealth allocations were obtained from State systems. They exclude Commonwealth funding direct to private providers. Fee for service includes Commonwealth expenditures, presumably not included in Commonwealth expenditures elsewhere recorded.

Table A4: Approximate Teaching and Academic Staff ('000s, Australia 1988 to 1994)

	School Teachers		VET Authorities	University Academics
	Persons	FTE	Full-time Teachers	Persons
1988	212	200	18	27
1989	211	199	18	27
1990	213	199	18	28
1991	213	200	18	30
1992	217	202	18	31
1993	218	202	20	32
1994	218	200	na	32

Source: ABS, *Schools Australia* (Cat. No. 4221.0).
DEET, *Selected Higher Education Statistics*.
ACVETS/NCVER, *Selected Vocational Education and Training Statistics*.

Notes: School teacher numbers exclude casual replacement teachers. FTE is full-time equivalent.

Table A5: Training or Teaching Staff Outside Formal Education ('000s, Australia, 1993)

	Adult or Community Education	Commercial Training Business	Non-profit Training Organisation	Supplier or Equipment Manufacturer	Other(a)	Total
Employees involved in conducting training	7.3	17.4	23.6	40.6	512.4	601.3
Proportion of time spent						
up to 25%	*3.8	14.4	20.0	31.8	455.8	525.8
26-75%	*2.5	*0.8	*2.6	*7.8	45.2	58.9
76-100%	*1.0	*2.2	*0.9	*1.1	11.3	16.5

Source: ABS, *Training and Education Experience* (Cat No 6278.0, Table 5.5).

* These estimates have relative standard errors in excess of 25%.

(a) Includes persons employed in Industry Skills Centres and at Business colleges.

Note: This table only includes employees and not employers or self employed persons.

THE TRAINING MARKET REFORMS AND THEIR IMPACT ON THE VOCATIONAL EDUCATION AND TRAINING SYSTEM

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Introduction

The decision to establish an open training market represents an important milestone in the development of the national training reform agenda, the principal stated aims of which are to improve the quality, diversity and flexibility of vocational education and training (VET) provision and to establish a more integrated and effective national system for skills formation in Australia. In conjunction with other key national reforms, the open training market concept constitutes a comprehensive framework for reshaping the structure, composition and balance of the VET system, with respect to the public and private training sectors, and for redefining the roles of and relationships between public and private providers in Australia. In particular, with the advent of the open training market concept, private providers have been assigned the hitherto unprecedented status of 'equal players' with publicly funded Technical and Further Education (TAFE) colleges in the national VET system.

In spite of the scale and significance of the training market reforms, there has been insufficient analysis of their impact to date on the national VET system. Furthermore, although governments have placed much greater emphasis on the role of private providers and their contribution to the process of national skills formation, relatively little is known about the size, structure and composition of the private training sector or its relationship to the public TAFE sector (Anderson 1994, 1995).

The purpose of this paper is to examine changes in the structure, size, composition and balance of the VET system in Australia in the wake of the training market reforms, with special reference to private providers. The paper argues that, by reconstructing the regulatory and financial basis of the VET system, the training market reforms have created the conditions for private sector growth and are facilitating a rapid transition from a peripheral to a parallel private training sector within the context of a unified national VET system.

1. Geiger's Typology of Private Sectors in Education

In a comparative study of higher education (HE) in eight countries, Geiger (1986) developed a threefold typology to describe the basic structural configurations of private, *vis a vis* public, sectors. In essence, Geiger argued that private HE sectors could take one of the following three forms: *mass, parallel or peripheral*. Geiger's typology is best viewed as a continuum with peripheral private sectors at one end and mass private sectors at the other. Private sectors may fall into any one of Geiger's three categories at any given time, and are capable of moving along the continuum in response to external factors. According to Geiger, governments can either encourage or hinder the emergence of parallel private sectors by exercising their substantial legislative, regulatory and financial powers. In summary, for a private education sector to undergo a peripheral-to-parallel transition, not only must the legal status of public and private institutions be equalised and their respective qualifications accorded the same recognition, but also any significant differences between the financial conditions under which they operate must be eliminated or minimised.

2. The Dual VET System in Australia

Up until the establishment of the open training market, the formal VET system in Australia was characterised by public provision, funding and regulation. The core of this system comprised state-based networks of government owned, maintained and controlled TAFE colleges. As Goozee (1993) observes, the remarkable growth and expansion of the TAFE system over the past two decades is directly attributable to the unprecedented injection of Commonwealth funding for capital and recurrent programs, indirect subsidisation via student financial assistance schemes (e.g. Tertiary Education Assistance Scheme), and the introduction of the legislative embargo on tuition fees in TAFE following the Kangan Report (ACOTAFE 1974). The TAFE system has since enjoyed sole access to government funding for VET programs, and almost exclusive control of publicly recognised vocational qualifications.

Coexisting with, but operating in almost total isolation from, the mass public TAFE sector was a non-TAFE sector which comprised a mix of private industry, enterprise and commercial providers of training, and a large informal sector of publicly funded adult and community education (ACE) providers.[1] In a highly segmented training system, private providers were confined to marginal areas of training provision, and denied any formal recognition for their activities. Lines of demarcation were clearly drawn between the public and private VET sectors, and non-government providers were prohibited from trespassing on TAFE college territory. Apart from a few isolated exceptions, TAFE colleges enjoyed exclusive rights to offer apprenticeship training which effectively cemented their position as the dominant institutional providers of off-the-job trade and technical training for industry.

Although private training institutions have performed a historically important role in the provision of certain forms of vocational education and training, they have been generally ignored, although tolerated, by government. Apart from the latter half of the 1970s when private not-for-profit business colleges received government subsidies to compensate for financial losses arising from the Commonwealth embargo on tertiary fees, private VET institutions have been independently financed and administered (CTEC 1978). Unlike the secondary school system where public and private schools have shared access to a common public award system and government funding for many years, the post-school VET system has been characterised by a strict separation between public and private providers with respect to curriculum, administration, jurisdiction and finance (Sweet 1990).

The extent to which private VET providers in Australia constituted an identifiable 'sector' like their secondary school counterparts is difficult to determine in the absence of any historical data on non-government provision in the post-school sector. The few available sources suggest that, apart from some notable exceptions, private providers have generally had a sporadic and fluctuating existence. Certainly, the provision of on-the-job and in-house training by industry and enterprise-based providers has been a widespread, though poorly documented, phenomenon. However, unlike off-the-job training provided by private institutions, this form of private sector training has been organisationally distinct from, and largely complementary to, the provision of off-the-job training in the public TAFE sector, particularly under the apprenticeship system. Furthermore, due to the lack of a sufficiently cohesive sectoral identity or recognised role in the overall framework of public policy, private providers have tended to operate as a fragmented and uncoordinated group of mutually independent organisations. At best, therefore, non-government providers of VET have in the past constituted what Geiger refers to as a peripheral private sector operating autonomously on the margins of the mass public TAFE sector (Geiger 1986).

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[1] Under the National Framework for the Recognition of Training, ACE providers are categorised alongside industry, enterprise and commercial training organisations as 'private providers'.

Up until the end of the 1980s, therefore, a dual system of post-school vocational education and training existed in Australia, comprising a mass public sector and peripheral private sector. The most striking features of this system were the complete separation of public and private providers in terms of access to government resources, course recognition and student certification, the almost total dominance of the mass public TAFE sector, and the virtual invisibility of the peripheral private VET sector, at least in terms of public policy. From an economic perspective, the TAFE system has enjoyed an effective monopoly over public funding for, and recognition of, VET provision, although it has been subject to much higher levels of government regulation than its private sector counterpart. Apart from the relatively small commercial arms of TAFE colleges which have for many years offered short non-accredited courses to private clients on a fee-for-service basis, TAFE colleges and other publicly-funded VET providers such as providers of adult and community education have operated almost exclusively under non-market conditions. Conversely, private providers have managed to survive on the fringes of the mass government-maintained TAFE sector relatively unconstrained by government regulation and operating under genuine free market conditions.

3. Training Market Reforms

The drift towards a market-based approach to training provision is evident in the policy directions and initiatives adopted by Commonwealth and State governments since the inception of the training reform agenda at the close of the 1980s. In essence, these reforms aimed to commercialise TAFE, legitimise private providers as 'equal players', and promote more intersectoral (and intrasectoral) competition between public and private providers. Initially these strategies were adopted in order to advance certain key objectives underlying the training reform agenda, such as increasing the efficiency and effectiveness of the public training system, improving the quality and diversity of training providers, and enhancing flexibility and responsiveness to industry needs and national economic priorities. Over time, however, these disparate initiatives cohered into a more systematic strategy to develop a market-based approach to VET provision (Anderson 1994). A brief chronology of key training market reforms and related government reports and policy statements is contained in Figure 1.

Arguably the most significant of these training market reforms is the creation of the National Framework for the Recognition of Training (NFROT) which constitutes a regulatory mechanism by which private providers and their courses can be respectively registered and accredited by public authorities. Combined with the introduction of national industry-determined competency standards as the common reference point for course development and accreditation in both the public TAFE and non-TAFE sectors, NFROT removes longstanding barriers to market access for non-TAFE providers including industry, enterprise, commercial and ACE providers.

In the 1994 Annual National Report for the Australian VET system, ANTA stated that the aims of developing an open training market are to:

- remove the monopoly of TAFE to award qualifications;
- ensure that the TAFE system is able to negotiate freely with industries, enterprises and individuals to provide training services and to charge for them;
- find appropriate ways for government to fund industry and other private training providers to undertake some aspects of training so that all government funding does not have to be allocated to TAFE; and
- encourage industries to spend more on training (ANTA 1995, p.10).

Figure 1: Chronology of Training Market Reforms

1986	Deregulation of export education Commonwealth funding for Australian Traineeship System opened up to private providers
1987	*Skills for Australia* (Dawkins and Holding 1987) Introduction of Commonwealth-State Resource Agreements/college performance agreements Commonwealth capital and equipment grants for TAFE-industry collaboration
1988	Competitive tendering introduced for Commonwealth labour market programs funds
1989	*Industry Training in Australia: The Need for Change* (Dawkins 1989) Introduction of Training Guarantee Levy
1990	*Training Costs of Award Restructuring* (Deveson 1990) Promotion of training market concept and associated reforms (e.g. national skills recognition, commercialisation of TAFE, tuition fees in TAFE) Special Ministerial Conference endorses training market concept
1991	Removal of Commonwealth prohibition on TAFE tuition fees
1992	*National Goals for Vocational Education and Training* (MOVEET 1992) endorse: • open training market • National Framework for Recognition of Training (NFROT) • competency-based training (CBT) • national industry competency standards Establishment of ANTA to facilitate and coordinate national training market development
1993	Extension of Austudy to private sector students *ANTA Priorities for 1994*: a 'client-focussed' system and market competition (ANTA 1993)
1994	*Successful Reform* (Allen Consulting Group 1994a) Recommended demand-driven resource allocation ('user buys') ANTA growth funds allocated by competitive tender
1995	ANTA implements 'user choice' pilot program

ANTA identified a number of strategies which had been implemented and piloted throughout the system to enhance the development of an open training market including competitive tendering, preferred supplier arrangements,[2] cooperative ventures and 'user choice'.[3] It reported that $12 million were made available during 1994 for open tendering activities, and foreshadowed a substantial increase in 1995. These funds were part of the $720 million in growth funds set aside for the VET sector under the Federal Government's *One Nation* initiative (Keating 1992).

In broad terms, the recent training market reforms undertaken by Commonwealth, state and territory governments have largely satisfied all three pre-conditions for the transition from a peripheral to a parallel private VET sector, as defined in Geiger's typology (1986). Although subject to different bodies of law (depending on whether they are incorporated bodies, not-for-profit organisations or otherwise), TAFE colleges and registered non-TAFE providers are now covered by acts of parliament governing VET which are relatively standard across the different state jurisdictions. Differences remain in that public TAFE colleges are still required to fulfil community service obligations and satisfy more stringent accountability requirements with respect to their recurrently funded course provision. However, recent moves at a national and state level to contract out a growing proportion of publicly funded VET programs under identical terms and conditions to public and private providers mean that, to all intents and purposes, the remaining disparities in legal status are relatively insignificant. The foreshadowed national competition reforms arising from the Hilmer Report (1993) are likely to further standardise the legal conditions under which public and private VET providers operate.

Secondly, public recognition of private sector courses under the National Framework for the Recognition of Training (NFROT), together with the national standardisation of VET qualifications under the Australian Qualifications Framework (AQF), has equalised the official status of public and private sector qualifications. As ANTA has stated, 'the development of national frameworks for the recognition of training providers and their courses has improved the process of making industry and private providers part of the vocational education and training system' (ANTA 1995, p.10). Although disparities may exist in the level of esteem attached by industry and the wider community to public and private qualifications, reforms to credit transfer and course articulation arrangements are progressively eliminating any formal differences.

Thirdly, major steps have been taken in the direction of equalising the financial conditions under which public and private providers operate, although significant differences persist. Two of the most important changes to date are the removal of the Commonwealth legislative embargo on fee charging in TAFE in 1991 – which has since resulted in steady fee increases in TAFE across Australia – and the extension of eligibility for Austudy benefits from 1993 to private students enrolled in publicly recognised courses. Both these changes have reduced the cost differential for students attending public and private training providers, although tuition fees remain considerably higher in the private sector.

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[2] 'Preferred supplier arrangements' refer to the practice of choosing a training provider(s) on evidence of past performance and demonstrated ability to achieve specified outcomes.

[3] 'User choice' denotes a system of resource allocation for apprenticeship/traineeship programs which aims to empower consumers by giving employers/employees joint responsibility for choosing between training providers (public or private). Government resources are subsequently directed to the selected providers. Although 'user choice' is designed to reduce the role of government in training provision, it still retains control over the administration of, and accountability for, training resources.

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With respect to direct government subsidies, the increasing use of competitive tendering in government resource allocation processes is progressively levelling the playing field in relation to program revenue bases in the public and private sectors. At this stage, the use of competitive tendering has been confined to Commonwealth funds for labour market programs, the Australian Traineeship System and some other national programs, and to a proportion of the ANTA growth funds administered by state governments. The introduction of new market mechanisms for resource allocation, such as the *de facto* voucher scheme proposed for apprenticeships/traineeships under the 'user choice' system of training provision, promises to further standardise the financial conditions under which public and private providers operate. Such approaches, if comprehensively implemented, would leave direct Commonwealth and state grants for TAFE infrastructure (staff, capital and equipment) as the only significant impediment to competitive neutrality between public and private providers.[4]

In summary, the training market reforms introduced by Commonwealth, state and territory governments over the past few years have to a large extent equalised the legal, regulatory and fiscal status of public and private training providers. Theoretically, the basic foundations have been laid for the private training sector in Australia to undergo a peripheral-to-parallel transition. The following section of this paper will examine the extent to which this process has occurred by analysing the changing structure, size, composition and balance of the public and private training sectors.

4. Impact of the Training Market Reforms

The lack of historical and contemporary data on the structure, composition and balance of the training system in Australia poses considerable difficulties in assessing the precise nature of the impact of the market reforms (Anderson 1994). Moreover, the fluidity of the policy environment and the differential nature of policy settings between and within the federal and State spheres of influence add a further layer of complexity to the overall picture. Nevertheless, it is possible to arrive at some broad and tentative conclusions about the nature, scope and dimensions of change in the national VET system on the basis of recent research on the training market and data on TAFE and registered private providers, albeit limited (Anderson 1994, 1995; ACG 1994b).

4.1 Sectoral Structure

The recent introduction of various forms of market financing and regulation by Commonwealth, state and territory governments has created a new tri-sectoral training market comprised of: a *fully regulated or closed market sector* in which access to recurrent program funds and capital grants remains restricted to TAFE colleges; a *partially regulated or quasi-market sector* in which Commonwealth funds for the delivery of training under the Australian Traineeship System, labour market programs, other nationally-funded programs and a proportion of ANTA growth funds are open to competition between public and private providers; and a *deregulated or open market sector* in which private, and increasingly public, providers engage in direct competition for clients and resources (Anderson 1994).[5]

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[4] As government-owned and maintained organisations, TAFE colleges continue to enjoy sales tax exemptions and other indirect financial subsidies which further reduce the cost of training delivery compared to private for-profit providers. At this stage, however, the Commonwealth Government seems unlikely to revoke such exemptions and subsidies. Conversely, private providers can charge market rates for the bulk of their course provision, in contrast to TAFE colleges which must abide by government limits imposed on fee charging for state-funded recurrent programs. Also, unlike TAFE colleges, private providers have unlimited capacity to raise venture capital through commercial loans for new business activities.

[5] The threefold typology of market sectors, defined here in terms of both finance and regulation, was first developed in Anderson (1994). It was subsequently modified by the Allen Consulting Group (1994b) in that the three market sectors were defined by funding mode alone, and were renamed as

The number, mix and balance of public and private providers have been re-organised within this new market framework. As stated previously, prior to the training market reforms, the national VET system comprised a mass public sector dominated by TAFE colleges and a peripheral private or non-TAFE sector comprising a diverse range of industry, enterprise, commercial and ACE providers. The former sector was characterised by high levels of public funding and regulation, whereas the latter sector was privately financed and largely unregulated. Reflecting the recent changes in market structure and organisation, however, the former dual sector structure of public and private providers has now been replaced by a tri-sectoral arrangement comprising a mass public TAFE sector, a new partially regulated private sector and an unregulated private sector (Anderson 1994, 1995).

Regulated Public Sector

Although the regulated public TAFE sector remains the largest of the three sectors, TAFE colleges are increasingly drawing on private sources of finance (student fees and industry contracts), exposed to competition in certain segments of the market, and subject to less comprehensive regimes of government regulation and bureaucratic control. The survival of this sector is contingent on the maintenance of a closed market sector and its size is directly linked to the extent to which access to government funds for recurrent program provision and capital infrastructure is restricted to public TAFE providers. However, due to the combined effects of government policy, public TAFE colleges are now also competing for funds in the new quasi-market and open market sectors.

Partially Regulated Private Sector

The second sector comprises a new and expanding partially regulated private or non-TAFE sector which is increasingly reliant on public funds and subject to higher levels of public scrutiny and accountability than was the former peripheral private sector. This sector is a product of the new forms of market financing and regulation introduced by Commonwealth and state governments. It is a partially regulated private sector in that providers operate in both the partially regulated/quasi-market and deregulated/open market sectors. Although registered private providers increasingly enjoy access to government program funds via competitive tendering processes, the extent of their access remains heavily restricted and dependent on government policy.

Unregulated Private Sector

The third unregulated sector of private or non-TAFE providers comprises the bulk of the former peripheral private sector and continues to operate independently of government finance and regulatory controls. In effect, while recent government reforms have created the conditions for the formation of a new category of private providers which is partially regulated and reliant on government funds, the voluntary nature of government registration under NFROT has allowed a second tier of unregistered private providers to continue functioning entirely outside the new framework of government financing and regulation in the quasi-market sector.

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follows: direct-funded, funding market, and open or commercial market. Given that market sectors are shaped by both financial arrangements and government regulation, the original typology has been retained and further developed in this paper.

The foregoing threefold typology of provider sectors is problematic in two respects. First, it takes no account of the fact that registered private providers are simultaneously operating in both the quasi and open market sectors. Private providers are only required to secure accreditation for courses for which they wish to seek government funding through competitive tender or for those which they wish to advertise on the open market as 'government accredited'. A recent pilot survey of 170 commercial training providers by the Australian Bureau of Statistics (ABS 1994a) found that their major sources of income are courses for specific employers (27 per cent) and scheduled courses for employers and individuals (59 per cent). Furthermore, of the 43 commercial providers who reported that some of their courses were government accredited, only 15 reported that all of the courses they conducted in 1993 were accredited (35 per cent), 11 reported that over half their courses were accredited (26 per cent), and 17 reported that less than half their courses were accredited (40 per cent) (1994a). In other words, most registered private providers continue to offer non-accredited courses on a commercial basis in the open market sector outside the framework of government regulation. This in turn suggests that in order to survive as commercial entities under current market conditions, private providers must maintain a significant presence in the open market sector.

The second factor obscured by the above typology is that TAFE colleges are increasingly moving outside the regulated or closed training sector to offer non-accredited training courses on a fee-for-service basis in the open market sector. This trend has been fuelled by the financial constraints imposed on public sector expenditure in conjunction with the introduction of Commonwealth/State resource agreements in the late 1980s which, *inter alia*, provide incentives for TAFE systems to raise private revenue and engage in joint ventures with industry. As such, it cannot be considered in isolation from the training market reforms which have stimulated growth in the private sector.

Insufficient data is available to allow the relative levels of market participation of TAFE colleges to be decomposed with any precision. National financial data for the TAFE system in 1993 shows that, while Commonwealth and state government funds accounted for $2.4 billion or 84.4 per cent of revenue, fee-for-service activities accounted for $220 million or 7.6 per cent, and student fees for $102 million or 3.5 per cent. The fee-for-service component included $104 million derived from competitive bids for Commonwealth labour market programs, $26 million from state government sources, and $90 million from 'other' unspecified sources which presumably included industry training contracts. Anderson (1994) found that an estimated 20 per cent of TAFE college revenue was derived from private sources in 1992, which comprised student fees (13 per cent) and industry funds (7 per cent). The fact that TAFE colleges are now operating in all three market sectors – closed, quasi and open – adds yet another dimension to an already complex sectoral structure.

4.2 Sectoral Size

Due to the lacuna of data about post-school VET provision in both the public and private sectors, it is difficult to estimate the comparative size of the three provider sectors. It is clear, however, that since the implementation of NFROT, there has been a rapid proliferation in the number and type of authorised non-TAFE providers of publicly recognised vocational qualifications. According to the Allen Consulting Group (ACG 1994b), there were 1209 registered non-TAFE providers in Australia as at September 1994. Given that there were only 309 non-TAFE providers registered nationally in September 1992, which increased to 782 by October 1993 (Anderson 1994), the size of the non-TAFE sector has increased almost threefold in the two year period since the implementation of NFROT. In terms of participant numbers, the 1993 ABS survey of commercial providers shows that most are relatively small training organisations. Forty per cent reported training fewer than 100 course participants and only 21 per cent trained 500 or more course participants in 1993.

Available data also suggest that the number of recognised private providers which comprise the new partially regulated private sector represents only the tip of the iceberg. For instance in its 1993 pilot survey of commercial providers, the ABS found that only 39 per cent of 170 provider respondents were registered with a State government training recognition authority (1994a). Moreover, only 25 per cent of commercial training providers had had their courses accredited with the relevant state accreditation authority, which suggests that three quarters of the total course provision in the private training sector continued to be delivered outside the partially regulated or quasi-market sector constructed by governments. In spite of government efforts to incorporate private providers in the national VET system, therefore, the unregulated private sector remains substantially larger than the regulated private sector.

ABS survey data shed some light on the differential impact of the training market reforms on various segments of the private training sector. As 47 per cent of commercial training providers classified as 'primarily training providers' were registered with a state government registration body compared to only 30 per cent of 'other training providers',[6] this suggests that government registration is a more attractive option for private organisations whose primary business activity is commercial training provision (e.g. business colleges, industry skill centres). Anderson (1994) found that a principal reason for commercial colleges (the private sector analogues of TAFE colleges) seeking government registration was to gain a marketing edge over their competitors. The reasons given by unregistered private providers in the ABS survey (1994a) for not obtaining registration were as follows: unaware of body (32 per cent), unaware of procedures (34 per cent), information not readily available (20 per cent), costs too high (20 per cent), time too lengthy (22 per cent), and other (46 per cent).

The expansion of the national VET system arising from the dramatic increase in the number of small recognised non-TAFE providers has been accompanied by numerical contraction in the public TAFE sector as a result of corporate restructuring. College amalgamations in the Victorian TAFE sector, for instance, have led to a 15 per cent reduction in the number of TAFE colleges from 34 in 1990 to 29 in 1994. Although the total number of campuses comprising the public TAFE sector increased during the same period, most of the smaller mono-purpose TAFE colleges were closed, reflecting the trend in the public TAFE sector towards large multi-campus development. In effect, government reforms have on the one hand expanded and diversified the composition of the national VET system by recognising small non-TAFE providers, and on the other reduced the total number of public TAFE providers by creating larger multi-campus institutions.

The extent to which the increase in the number of recognised non-TAFE providers reflects actual growth in the total size of the private training sector is impossible to determine in the absence of any base line data on private provision prior to the training market reforms. The increase in the number of government registered non-TAFE providers may simply reflect decisions by established non-TAFE providers to move into the new quasi-market sector. In other words, the training market reforms may not have stimulated any real growth in the level of private provision *per se*, but rather just a re-organisation of existing private providers into the quasi and open market sectors.

Counterbalancing this assessment, however, is the finding of the ABS survey (1994a) that 47 per cent of commercial training providers have been operating since 1987, around which time the training market reforms commenced. More significant is the finding that 62 per cent of primarily training providers started operating in the training market after 1987, and 45 per cent after 1990 when the major training market reforms commenced. Whether these trends were the result of growing demand for VET programs and services in the wake of training market reforms (combined with award restructuring and

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[6] 'Primarily training providers' are those for whom commercial training provision is their main business activity as opposed to 'other training providers' who offer commercial training only as a subsidiary activity.

multi-skilling), or simply a reflection of the fluctuating nature of private sector involvement in training, is however difficult to assess – and will remain so until better time series data is available on private providers and their business cycles.

The ABS findings suggest that the training market reforms, in conjunction with award restructuring and workplace reform, have on balance facilitated rather than hindered growth in the private training sector. Primarily training providers, for instance, reported that the following factors have had a positive effect on their level of training activity: increased employer awareness of the importance of training (74 per cent); multi-skilling/cross-occupational training (65 per cent); shortages of skilled labour (62 per cent); technological change (59 per cent); changes in employer work practices other than multi-skilling (54 per cent); moves towards competency-based training (48 per cent); training opportunities provided by government labour market training programs (44 per cent); implementation of government legislation (40 per cent); overflow of students from TAFE or universities (34 per cent); and training opportunities provided by Austudy programs (28 per cent) (ABS 1994a). While some of these factors are more directly related to the training market reforms than others, it is clear that the latter five positive growth factors, all of which arise directly from government training reforms, have been instrumental in the formation of the quasi-market sector. Each of these training market reforms has either directly contributed to greater competitive neutrality between public and private providers or indirectly expanded the potential pool of clients and financial resources for private providers.

Conversely, primarily training providers reported that the following factors associated with training market reforms have had negative effects on their level of training activity: competition from the commercial activities of TAFE or universities (46 per cent); costs of and/or difficulties with access to accreditation procedures (38 per cent); lack of national accreditation standards (31 per cent); and lack of credit transfer or course articulation (29 per cent) (ABS 1994a). Ironically, increased intersectoral competition (i.e. between private providers and TAFE/universities) is one of the main intended objectives of the training market reforms and one which government reports have argued should result in better quality and lower prices for training (Deveson 1990; Carmichael 1992). In this regard, it should be discounted as a negative growth factor. The other three negative growth factors relate to areas in which ANTA has indicated remedial action is being taken to improve efficiency and effectiveness in response to provider concerns (ANTA 1994).

The two other significant negative growth factors for primarily training providers were not directly associated with the training market reforms as follows: lack of investment capital (49 per cent); and shortage of experienced/qualified instructors/trainers (27 per cent) (ABS 1994a). In both cases, however, it would be possible for government to reduce these inhibitors to growth in the private sector, specifically by increasing private access to government capital grants for infrastructure development and/or public training facilities and equipment; and by increasing the supply of experienced/qualified trainers/teachers through a combination of industry release programs for qualified teachers, professional development programs for under-qualified staff in the private training sector, and financial incentives for experienced industry staff to undertake teacher training.

In sum, therefore, the training market reforms appear to have had a net positive impact on the level of training activity in the private sector, especially for those organisations whose primary business activity is commercial training provision. At the very least, the 1993 ABS survey data suggest that, although there may be no direct causal relationship between training market reform and increased private sector provision, government intervention has been effective in terms of removing significant barriers to market access for private providers since the late 1980s.

4.3 Sectoral Composition

Data on the composition of the partially regulated private or non-TAFE sector is limited. However, while relatively little is known about registered private providers, even less is known about unregistered private providers (Anderson 1994, 1995). Available data show that the introduction of NFROT has not only increased the number but also diversified the type of recognised providers of vocational qualifications. Nationally, industry providers accounted for 16 per cent of all registered non-TAFE providers in 1994, enterprise providers accounted for 18 per cent, commercial providers accounted for 37 per cent, community providers accounted for 24 per cent, and other providers (e.g. secondary schools) accounted for 6 per cent (ACG 1994b). As reflected in Table 1 which shows registered non-TAFE providers in Victoria as at June 1995, commercial providers accounted for 21 per cent, industry providers accounted for 18 per cent, enterprise providers accounted for 16 per cent, community-based providers accounted for 32 per cent, and private and state secondary colleges accounted for 14 per cent. Therefore, excluding community providers who are not-for-profit organisations, at least one third and up to two thirds of all registered non-TAFE providers in Australia are for-profit providers of training programs and services.

Table 1: Registered Non-TAFE Providers, Victoria, June 1995

Provider Category	Number (%)
Commercial	93 (21%)
Industry	79 (18%)
Enterprise	72 (16%)
Community • Adult and Further Education (70) • Skillshare (40) • ACFE and Skillshare (7) • Other (27)	144 (32%)
Private Secondary College (PSC)	21 (5%)
State Secondary College (SSC)	41 (9%)
Total	**450 (100%)**

Source: OTFE (1995), *State Register of Private Providers of Vocational Education and Training*, June.

It should be noted, however, that the NFROT definition of 'private provider' includes not only non-TAFE providers which belong to the private sector (e.g. business colleges, industry skill centres, in-house trainers and training consultants), but also non-TAFE providers which technically reside in the public sector (e.g. providers of adult and community education, Skillshare agencies and state secondary schools).[7] In Victoria, for instance, public non-TAFE providers accounted for about 52 per cent of the 450 registered private providers in June 1995, whereas private non-TAFE providers accounted for only 42 per cent. In this respect, therefore, aggregate data on private provider registration masks, and indeed overstates, the real extent to which the training market reforms have altered the composition of the national VET system.

As reflected in Table 2, although recognised training in the non-TAFE sector spanned a diverse range of industries and occupations in Victoria in 1995, 76 per cent of the recognised courses which non-TAFE providers were accredited to deliver involved training for the services sector. The most common areas of recognised course provision in the non-TAFE sector were: business services (31.3 per cent); general studies (14.0 per cent); social and community services (SACS) (7.8 per cent); tourism and hospitality (6.4 per cent); and wholesale, retail and personal services (WRAPS) (6.0 per cent). The heavy concentration of registered non-TAFE providers on services sector training is indicative of the course profile in the wider non-TAFE sector. The ABS survey (1994a) of commercial training providers (in which 69 per cent of the sample population comprised unregistered private providers) found that training courses were most frequently offered in management and administration, (31 per cent), supervision (23 per cent), general computing skills (21 per cent), technical and para-professional courses (18 per cent) and sales and personal services (18 per cent).

Commercial and community-based providers, who collectively accounted for 53 per cent of all registered non-TAFE providers in Victoria, provided 74 per cent of all recognised non-TAFE courses leading to occupations in the services sector. Sixty nine per cent of recognised non-TAFE courses leading to occupations in the primary (agriculture/horticulture) and secondary (manufacturing) industries were offered by industry and enterprise-based providers, who collectively accounted for only 34 per cent of all registered non-TAFE providers in Victoria. Therefore, although the non-TAFE sector remains heavily segmented in terms of provider type and area of study, as a whole it comprises a heterogeneous range of providers offering recognised training for an equally broad range of industries and occupations.

In terms of geographical spread, available data suggest that the recent growth in recognised training providers is largely confined to metropolitan areas. As Table 3 shows, 70 per cent of registered non-TAFE providers in Victoria in 1994 were located in metropolitan areas. Excluding public non-TAFE providers (i.e. community providers and state secondary colleges), the data show that 83 per cent of registered private non-TAFE providers were located in metropolitan areas. Of the 27 registered private non-TAFE providers who operated in non-metropolitan regions, only a small number were located in rural and isolated areas. The geographical distribution of private providers in the non-TAFE sector therefore differs markedly from that of TAFE colleges which were comprised of campuses and annexes dispersed more widely across metropolitan and non-metropolitan areas (NCVER 1995).

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[7] Although the NFROT definition of 'private providers' includes both publicly and privately financed providers of VET programs and services, providers registered under NFROT will be referred to generally as 'non-TAFE providers'. In the interests of accuracy and consistency, a distinction is drawn in this paper between 'public non-TAFE providers' and 'private non-TAFE providers' where relevant.

Table 2: Private Provider Courses by Industry, Victoria, June 1995

Industry	IND	ENT	CBP	COM	PSC	SSC	TOT	%
Agriculture/horticulture	15	1	30	10	4	1	61	4.6
Allied industries	–	16	–	–	–	–	16	1.2
Arts/entertainment	5	1	3	15	2	5	31	2.6
Automotive	7	9	2	4	–	5	27	2.0
Building/construction	17	6	2	3	–	–	28	2.1
Business services	46	27	135	152	14	38	412	31.3
Electrical/electronics	15	7	2	1	2	11	38	2.9
Engineering	22	44	7	1	–	3	77	5.8
Food	1	11	1	1	–	–	14	1.1
Forestry	20	6	2	–	–	–	28	2.1
Furnishing	1	1	2	–	–	–	4	0.3
General studies	24	12	96	51	–	2	185	14.0
Health	15	7	5	17	–	–	44	3.3
Information technology	1	–	14	34	1	–	50	3.8
Local government	8	1	–	–	–	–	9	0.7
Printing	1	2	–	–	–	–	3	0.2
Provider-owned	3	–	–	1	–	–	4	0.3
SACS	10	8	67	18	–	–	103	7.8
TCF	7	4	–	–	–	–	11	0.8
Tourism/hospitality	10	5	30	31	6	2	84	6.4
Transport/storage	7	2	1	–	–	–	10	0.8
WRAPS	9	2	39	39	–	–	79	6.0
TOTAL	**243**	**172**	**428**	**379**	**29**	**67**	**1318**	**100**

Source: OTFE (1995) *State Register of Private Providers of Vocational Education and Training*, June.

Key: IND = industry provider, ENT = enterprise provider, CBP = community-based provider, COM = commercial provider, PSC = private secondary college, SSC = state secondary college.

Table 3: Geographical Location of Registered Non-TAFE Providers, Victoria, March 1994

Provider type	Metropolitan	Non-Metropolitan
Commercial	47 (85%)	8 (15%)
Industry	44 (85%)	8 (15%)
Enterprise	34 (76%)	11 (24%)
Community (CBP)	61 (51%)	58 (49%)
Private secondary colleges (PSC)	8 (100%)	nil
State secondary colleges (SSC)	8 (80%)	2 (20%)
Total non-TAFE providers	202 (70%)	87 (30%)
Private providers (excluding CBP, SSC)	133 (83%)	27 (17%)

Source: OTFE (1994) *Registered Private Providers' Address List*, March.

Comparing raw numbers of providers and courses is an inadequate basis for assessing the relative size and significance of the TAFE and non-TAFE training sectors. As previous research has revealed, not only are TAFE colleges much larger and more educationally diverse institutions than private and public non-TAFE providers, but institutional and course numbers give no indication of the relative number of student enrolments in each sector (Anderson 1994). Nevertheless, it is clear that the training market reforms have generated significant change in the size and composition of the national VET system in a relatively short period of time. Recognised non-TAFE providers outnumber TAFE colleges by almost two to one and they are increasingly competing with TAFE providers for government funds in the quasi-market sector and privately financed clients in the open market sector.

The composition of the national VET system has been correspondingly diversified in terms of provider type and field of study, although there is a roughly even split between private and public non-TAFE providers. Although the training market reforms have generated greater numerical flexibility in the national VET system, the vast majority of non-TAFE providers are concentrated in services sector training and in metropolitan areas. As the training market remains segmented in these significant ways, therefore, the benefits of recent government reforms are less likely to be realised by clients seeking training opportunities in the non-services sector and in non-metropolitan areas, particularly rural and remote regions.

4.4 Balance of Public and Private Training Provision

Sectoral balance can be defined and measured in several ways, for instance in terms of the volume of training delivered (student contact hours), enrolment numbers and finance. In none of these cases, however, are data sufficient to enable accurate and definitive comparisons to be made. Moreover, as the ABS only began to disaggregate data on non-TAFE enrolments and finance from 1993 onwards, it is difficult to gauge the extent to which there has been any change in sectoral balance since the introduction of the training market reforms. Nevertheless, it is possible to arrive at some broad conclusions about the relative size of the non-TAFE sector and the private sub-sector on the basis of available information on participation and finance.

Participation

According to the most recent ABS data collected for *Training and Education Experience, Australia 1993* (ABS 1994b), 841,100 persons were enrolled in 1993 in post-secondary studies leading to qualifications up to and including diploma level courses. The Allen Consulting Group (ACG) estimated that this number represents around 9 per cent of the 9.2 million persons who were in the labour force (or 'marginally attached to the labour force') (ACG 1994b). As reflected in Table 4, TAFE accounted for the largest share of enrolments in non-degree post-secondary qualifications with around 61 per cent of the total student population, while the non-TAFE sector (industry skill centres, business colleges and other), excluding secondary schools and universities, accounted for about 27 per cent. In the non-TAFE sector, industry skill centres and business colleges accounted for just under 7 per cent of enrolments and the 'other' category – which includes organisations such as professional associations, other commercial training organisations and non-profit training organisations – accounted for about 20 per cent of total enrolments. In terms of participation in courses leading to non-degree post-secondary qualifications, therefore, these figures suggest that the non-TAFE sector was almost half the size of the TAFE sector.

Table 4: Persons Enrolled in Studies for Non-degree Post-secondary Qualifications, 1993 (Number of Enrolments '000)

	Uni	TAFE	Other	Industry Skill Centre	Business College	Secondary School	Total
Diploma	53.8	165.8	30.0	6.4	5.3	0.0	261.3
Vocation quals	17.0	268.1	52.6	7.8	10.3	0.6	356.4
Other	17.3	82.0	82.2	17.8	10.1	14.0	223.4
Total	**88.1**	**515.9**	**164.8**	**32.0**	**25.7**	**14.6**	**841.1**

Source: Allen Consulting Group (1994b, p. 7).

In terms of persons enrolled in post-secondary qualifications by area of study, the major areas of course provision in TAFE were business and administration, engineering, architecture and building, and society and culture in descending order. Prominent in the non-TAFE sector were courses in business and administration, health and miscellaneous fields. Thirty seven per cent of post-secondary courses offered by industry skills centres and business colleges were in the field of business and administration (ACG 1994b).

With respect to course types, the ABS estimates show that, in 1993, TAFE was the major supplier of skilled and basic vocational qualifications, associate diplomas and short certificate courses. The non-TAFE sector, on the other hand, accounted for a considerable proportion of the output of short certificate courses. Between them, industry skill centres and business colleges accounted for around 17 per cent of certificates of less than one semester duration (ACG 1994b). These data suggest that non-TAFE providers concentrated on the provision of short courses primarily for the services sector, whereas TAFE colleges provided courses of longer duration and higher academic status for a wider range of industries outside the services sector, particularly manufacturing. The principal reason given by private providers for this pattern of provision is that, compared to services sector training where market barriers are relatively low or insignificant, trade and technical training is not commercially viable due to the level of competition from TAFE colleges and the high start-up costs and capital-intensive nature of associated infrastructure (facilities and equipment) (Anderson 1994; ACG 1994b).

These data suggest that, under current market conditions, the non-TAFE sector responds primarily to industry and community demand for training in areas that are under-serviced by TAFE. In addition to providing training for employers and individuals in the services sector, the ABS survey of commercial training providers found that 45 per cent of primarily training providers delivered training to fee-paying overseas students in 1993, and that training opportunities arising from government labour market programs and from the overflow of students from TAFE and universities were significant growth factors for 44 and 34 per cent of primarily training providers respectively. Moreover, 63 per cent of primarily training providers identified scheduled/public courses for fee-paying clients (individuals or employers) as their major source of revenue, followed by courses for specific employers (21 per cent) and courses conducted under government labour market programs (17 per cent). Available data suggest, therefore, that although conditions exist for potential growth and expansion of private sector training, TAFE continues to dominate the core of the training market and private trainers remain essentially confined to the roles of niche market providers and/or overflow institutions.

Training Revenue

The Allen Consulting Group (ACG 1994b) prepared estimates of the absolute size of the training market and its various sectors based on data from the Australian Committee for Vocational Education and Training Statistics (ACVETS) and the ABS. As reflected in Table 5, ACG estimated that the total size of the training market was between $6.5 billion and $8.6 billion per annum in 1992. In terms of training revenue, the non-TAFE training sector accounted for between $3,610 and $5,700 million in 1992, whereas TAFE received $2,934 million. Taking ACG's preferred minimum size estimate as the point of comparison (shown in bold type in Table 5), these figures suggest that although TAFE was the largest single sector, the non-TAFE sector was approximately 19 per cent larger than the TAFE sector in terms of training investment.

The utility of these data is limited in that they provide only an aggregate profile of sectoral balance in the training market as a whole and shed no light on the relative shares enjoyed by public and private providers in each of the three market sectors. Further, in the absence of any time series data, it is impossible to determine whether the relative sizes of the private and public sectors have changed since the implementation of the training market reforms.

Some indication of recent change in sectoral balance in the quasi-market sector can be gleaned from published data, albeit limited, which reflects market shares by sector since 1988/89 with respect to Jobtrain, the major Commonwealth labour market training program (LMP) for the long term unemployed. Although data on Jobtrain allocations are sketchy and reflect conditions in only one segment of the partially regulated quasi-market sector, they nevertheless shed light on the impact of training market reforms, specifically the effects of competitive tendering on the balance of provision between the TAFE and non-TAFE sectors.

As reflected in Table 6, in the period between 1988/89 and 1993/94, the relative market positions of TAFE colleges and private (including community-based) providers altered dramatically, with TAFE's market share declining in inverse proportion to that of private (non-TAFE) providers. In 1988/89, the ratio of Jobtrain allocations to the TAFE and private (non-TAFE) sectors was 70:30. By 1993/94, however, the relative market shares had almost reversed with the ratio becoming 35:65. Moreover, in the six year period between 1988/89 and 1993/94 when total Jobtrain funding allocations increased by around 24 per cent, the TAFE allocation decreased by 37 per cent, whereas the non-TAFE allocation increased by 266 per cent. This trend clearly points to a significant increase in the market share commanded by private providers in the wake of government reforms.

Table 5: Estimated Size of Major Training Provider Groups, 1992

Provider Group	($million)
TAFE (also includes State funded adult education organisations)	**2,934**
Adult and community education centres (ABS definition: non-profit, non-government organisation under local control)	**250**-500
Industry skill centres (ABS definition: vocation oriented training centres providing accredited courses such as automotive skills centres)	**200**-250
Business colleges (ABS definition: private commercial and secretarial colleges)	**60**-150
Commercial training businesses (Definition by default as other commercial training organisations)	**500**-1,000
Non-profit training organisations (Definition by default as other non-profit training organisations)	**500**-1,000
Supplier, equipment manufacturer (No explicit definition, taken as self-explanatory)	**1,000**-1,700
Other (Taken as enterprise internal training. Size figure is for enterprise internal training spending only and excludes employee salary cost while undertaking training)	**1,100**
TOTAL	**6,544**-8,634

Source: Allen Consulting Group (1994b, p.4).

This trend is confirmed at a more general level in the ACG report (1994b), which found that although TAFE had traditionally been the major recipient of funds for LMP training, its market share had decreased significantly in recent times. Of the $520 million allocated in 1992/93 for the training component of Commonwealth LMPs, the ACG report estimated that TAFE had probably received slightly less than half (although the precise ratio is unclear in the absence of authoritative figures from the Department of Employment, Education and Training (DEET)). According to the ACG, the major recipients of LMP funds appear to have been small private and community-based providers, particularly Skillshare agencies – a finding which concurs with that made in a comparative study of public and private providers in 1993 (Anderson 1994).

Anecdotal evidence from State training authorities, as recorded in the ACG report (1994b), also highlights the growing predominance of private training institutions, particularly commercial colleges, in the delivery of training places under the Australian Traineeship System. In Western Australia, 'some one third of traineeship off-the-job provision is provided by private providers' (ACG 1994b, p.62). Moreover, ACG reported that, although TAFE continues to provide 'the lion's share of traineeships across all States', DEET has forecast a decline in TAFE's market share 'reflecting the anticipated growth in private provider provision in fields such as hospitality or retail where there are traineeship programs' (1994b, p.62).

Table 6: DEET Jobtrain Funding by Sector, Australia, 1988-1994[1]
$ million (percentage of total funds)

Financial Year	TAFE	Private Providers[2]	Total
1988/89	36.6 (70%)	15.8 (30%)	52.4 (100%)
1989/90[3]	22.2 (54%)	18.4 (45%)	40.6 (100%)
1990/91	35.7 (53%)	32.1 (47%)	67.8 (100%)
1991/92[4]	(40%)	private: (30%) community: (15%) total: (45%)	(85%)
1992/93[5]	n/a	n/a	n/a
1993/94	23 (35%)	42 (65%)	65 (100%)

Source: *DEET Programs: Impact on TAFE* (AGPS various years) and ACG (1994b)

Notes:

(1) Figures for the first three financial years are based on data contained in *DEET Programs: Impact on TAFE* (AGPS 1988,1990,1991,1992) for each State and Territory. Figures for 1993/94 are drawn from DEET data reported by the Allen Consulting Group (ACG 1994b).

(2) The DEET definition of 'private providers' includes private, community and other providers in the non-TAFE college sector.

(3) Figures for 1989/1990 do not include the Jobtrain funding allocation for Victoria as they were not contained in the relevant DEET report. Adjusted downwards at the average national rate (i.e. Jobtrain funding decreased nationally by 4.7 per cent between 1988/89 and 1989/90), the Jobtrain funding allocation for Victoria in 1989/90 is estimated to have been around $9.3 million. This adjustment brings the total national allocation for Jobtrain in 1989/90 to $49.9 million.

(4) Although precise financial data was not published for 1991/92, DEET reported the relative public and private sector shares of Jobtrain funding in percentage terms as shown. However, the percentages reported by DEET did not total 100 per cent.

(5) Comparative financial data for 1991/92 and 1992/93 are not available in published form as DEET ceased reporting Jobtrain funding by sector in 1990/91.

To which factors this shift in relative TAFE and private (non-TAFE) market shares can be precisely attributed is unclear. Presumably, as cost-competitiveness is a major criterion employed by DEET when awarding contracts, either private providers have proven to be more cost-efficient or TAFE colleges have been steadily pricing themselves out of the market. As a comparative study of TAFE and commercial colleges in 1993 revealed, private providers bear lower overhead costs than TAFE colleges and tend to undercut their competitors on price by economising on inputs such as support services, facilities and equipment (Anderson 1994). Alternatively, as private providers enjoy greater flexibility than TAFE colleges with respect to program organisation and resource management, they may be more efficient at mounting the rapid-response short course provision required under DEET labour market programs. The tendency for DEET LMPs and traineeships to be established in non-trade areas may have also contributed to this trend, given that private providers tend to specialise in training for the services sector, an area in which the level of TAFE provision has been traditionally low in relative terms.

Although Commonwealth funding for labour market programs such as Jobtrain influences only one segment of the training market, it is nevertheless an important one because it is the principal area in which the Federal Government has direct control over the allocation of VET resources. As such, it provides a significant indication of the direction in which the Federal Government, via DEET, has been attempting to steer the training system. Were Commonwealth and State governments to open up access to public VET funds on a wider basis to private providers, particularly in the closed market sector of recurrently funded program provision, this trend could be repeated with a consequent shift in the sectoral balance of finance and participation from the public to the private sector. However, as the bulk of private non-TAFE providers are concentrated in services sector training, the trend is unlikely to occur to the same extent across the board unless governments decide to allocate capital grants to private providers for infrastructure development or to open up access to publicly funded facilities and equipment in the TAFE sector.

4. Conclusion

In conclusion, the foregoing analysis suggests that the training market reforms are fundamentally transforming the structure, size, composition and balance of the national VET system in Australia. To the extent that government reforms have now largely standardised the legal, regulatory and financial conditions under which public and private providers operate, the pre-conditions identified by Geiger (1986) for the emergence of a parallel private sector have been essentially satisfied. As the above examination of changes in the national VET system shows, the former dual sector structure comprising a mass public TAFE sector and a peripheral private sector has been replaced by a more complex tri-sectoral structure comprising a regulated public sector, a partially regulated private sector and an unregulated private sector. The second of these sectors did not exist prior to the training market reforms and is the direct product of new financial and regulatory arrangements established by Commonwealth, state and territory governments since the late 1980s.

Coinciding with the changes in sectoral structure are: an overall increase in the number of recognised training providers comprising the national VET system (a trend confined largely to metropolitan areas); a decrease in the number of public training institutions operating in the regulated TAFE sector accompanied by a trend towards large multi-campus development; a diversification of the type of recognised training providers; and an expansion of recognised course provision in the services sector. Despite these developments, the public TAFE sector continues to dominate the core of the training market. Although still confined to relatively narrow segments of the training market, private providers are nevertheless steadily expanding into the quasi-market sector.

Having met the basic pre-conditions identified by Geiger (1986), and having created the conditions for private sector growth by progressively removing barriers to public VET funds for program delivery, the training market reforms are hastening the transition of the peripheral private training sector along the continuum towards a parallel private training sector (refer to Figure 2). The training market reforms have also contributed to an apparent shift in the balance of training provision from the public to private sector in the context of the quasi-market sector. The only major factors constraining the full-blown emergence of a parallel private training sector are financial: continuing direct government subsidisation of recurrent program provision and infrastructure (staff, capital and equipment) in the public TAFE sector. Although the former constraint is steadily diminishing as a result of the progressive application of competitive tendering and 'user choice' approaches to government resource allocation for program delivery, the remaining restrictions on access to direct government subsidies are nonetheless significant.

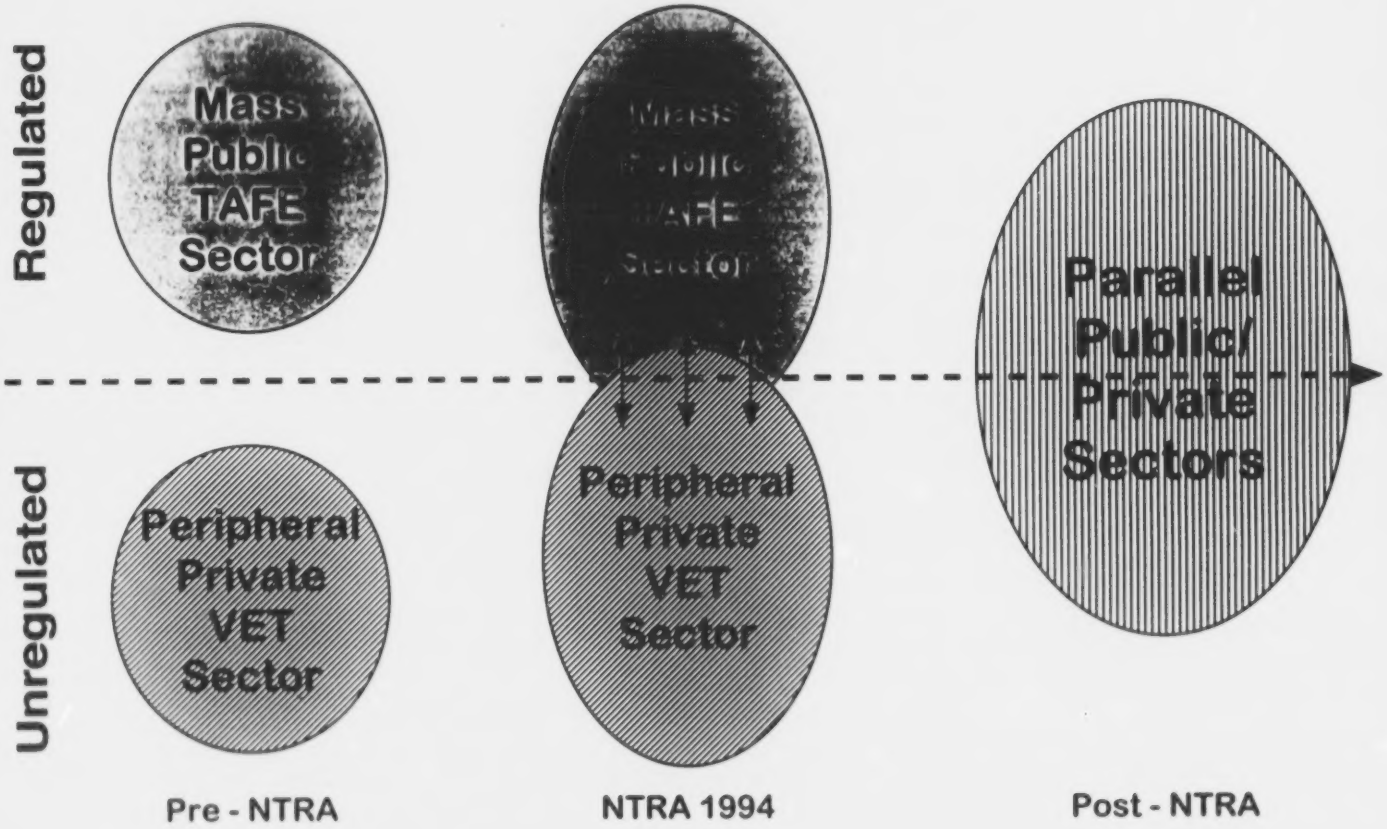

Figure 2: Convergence of Public and Private VET Sectors

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In view of the collective government commitment to generate market-based competition in the national VET system and the logic underlying the market drift in the national training reform agenda, it is conceivable that private providers may be granted access to public infrastructure resources in the foreseeable future. This could occur either through the development of resource sharing arrangements with public providers or by way of direct government subsidies. Were the recommended competition reforms made by the Hilmer Report (1993) to be applied to the national VET system, there is a strong likelihood that such steps would be taken. The result would be a further erosion of the protected position of TAFE colleges and an intensification of intersectoral and intrasectoral competition for clients and resources.

If, however, private providers are denied access to publicly funded facilities and to government subsidisation for infrastructure development, the transition to a parallel private sector is likely to halt at its current stage of development. Without equal access to existing or future public infrastructure resources, private providers will have no choice but to compete in a restricted and uneven market environment which continues to favour TAFE. In the absence of full competitive neutrality and with no guarantee of financial returns, non-government providers will remain reluctant to invest private capital in high-cost training infrastructure. In such circumstances, it is likely that private providers will continue to perform their traditional roles as niche market providers of services sector training and/or as overflow institutions soaking up unmet demand from the public TAFE sector.

References

Allen Consulting Group (ACG) 1994a. *Successful Reform. Competitive Skills for Australians and Australian Enterprises*, Australian National Training Authority, Brisbane.

Allen Consulting Group (ACG) 1994b. *Establishing an Effective Australian Training Market, Final Report to the Office of Training and Further Education*, OTFE, Melbourne.

Anderson, D. 1994. *Blurring the Boundaries: TAFE and Commercial Colleges in the Open Training Market*, National Centre for Vocational Education Research, Adelaide.

Anderson, D. 1995. "Private Training Provision in Australia: An Overview of Recent Research", in F. Ferrier and C. Selby Smith (eds.), *The Economics of Education and Training 1995*, AGPS, Canberra, pp. 1-14.

Australian Bureau of Statistics (ABS) 1994a. *Survey of Commercial Training Providers Australia. Statistical Report 1993*, Catalogue No. 6352.0.00.001, AGPS, Canberra.

Australian Bureau of Statistics (ABS) 1994b. *Training and Education Experience, Australia 1993*, Catalogue 6278.0, AGPS, Canberra.

Australian Committee on Technical and Further Education (ACOTAFE) 1974. *TAFE in Australia. Report on Needs in Technical and Further Education*, (Kangan Report) 2 Vols., April, CTEC, Canberra.

Australian Committee on Vocational Education and Training Statistics (ACVETS) 1994. *Collection of National Financial Data on Vocational Education and Training. 1993 Calendar Year*, December, ACVETS, Canberra.

Australian National Training Authority (ANTA) 1993. *Priorities for 1994. Advice of the Board of the Australian National Training Authority*, ANTA, Brisbane.

BEST COPY AVAILABLE

Australian National Training Authority (ANTA) 1994a. *Proposals for More Effective Implementation of Training Reform*, ANTA, Brisbane.

Australian National Training Authority (ANTA) 1994b. *Vocational Education and Training: Directions and Resource Allocations for 1995*, ANTA, Brisbane.

Australian National Training Authority (ANTA) 1995. *Annual National Report: Australia's Vocational Education and Training System*, 2 Vols., ANTA, Brisbane.

Carmichael, L. (Chair, Employment and Skills Formation Council) 1992. *The Australian Vocational Certificate Training System*, National Board of Employment, Education and Training, Canberra.

Commonwealth Tertiary Education Commission (CTEC) 1978. *Report on Non-Government Business Colleges*, CTEC, Canberra.

Dawkins, J. 1989. *Industry Training in Australia: The Need for Change*, AGPS, Canberra.

Dawkins, J.S. and Holding, A.C. 1987. *Skills for Australia*, AGPS, Canberra.

Department of Employment, Education and Training (DEET) (various years). *DEET Programs: Impact on TAFE*, AGPS, Canberra.

Deveson, I., Chair 1990. *Training Costs of Award Restructuring*, 2 Vols., (Deveson Report), AGPS, Canberra.

Geiger, R. 1986. *Private Sectors in Higher Education: Structure, Function and Change in Eight Countries*, University of Michigan Press, Ann Arbor.

Goozee, G. 1993. *The Development of TAFE in Australia*, NCVER, Adelaide.

Hilmer, F. (Chair) 1993. *National Competition Policy. Report by the Independent Committee of Inquiry*, AGPS, Canberra.

Keating, P. 1992. *One Nation*, AGPS, Canberra.

Ministers of Vocational Education, Employment and Training (MOVEET) 1992. *National Goals for Vocational Education and Training*, VEETAC, Canberra.

National Centre for Vocational Education Research (NCVER) 1995. *Selected Vocational Education and Training Statistics 1994*, NCVER, Adelaide.

Office of Training and Further Education (OTFE) 1994. *Registered Private Providers. Address List, March 1994*, OTFE, Melbourne.

Office of Training and Further Education (OTFE) 1995. *State Register of Private Providers of Vocational Education and Training*, June, OTFE, Melbourne.

Sweet, R. 1990. *Relationships Between TAFE and Other Education Systems*, unpublished mimeo, Dusseldorp Skills Forum, Sydney.

THE IMPLICATIONS OF VET FOR EARNINGS

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This paper uses data from the 1993 ABS *Survey of Training and Education* to examine the influence of different forms of post-school education on the earnings of full-time employees. The analyses indicate that completion of post-school qualifications does have a positive impact on earnings, other factors equal. The earnings differentials are highest for degrees, associate diplomas, skilled vocational qualifications (for females) and basic vocational qualifications (for males). Except for basic vocational qualifications held by full-time female employees, the earnings differentials are greater than for those who did not go beyond the final year of secondary school. These results provide broad support for efforts to lift education participation rates in Australia.

Introduction

This paper examines the relationship between the completion of different forms of post-school education and earnings. It attempts to determine whether vocational education has a positive impact on employees' earnings. Resolution of this question is important for policy development in the VET sector, and for helping individuals and enterprises to make informed decisions about education and training programs.

There is little evidence in Australia about the effect of VET participation on labour market performance. Australia is not alone in this regard. In 1994 the National Center for Education Statistics (NCES) in the USA assessed data availability and adequacy in the G-7 countries with respect to international competitiveness in vocational skills. The study concluded that 'considerable detail is needed to link participation in particular vocational curricula and programs to labor force outcomes, and this is rarely available' (NCES 1994, p.ix).

The results presented in this paper are derived from a relatively recent and comprehensive Australian database. The *Survey of Training and Education* was conducted by the Australian Bureau of Statistics (ABS) in 1993. The paper uses multivariate analyses to examine the extent to which post-school educational attainment influences participation in training, and earnings, after controlling for a range of personal background and labour market variables. Although the data are not as detailed as one would like for research in this area, these preliminary results provide general support for the argument that participation in VET improves employees' earnings.

1. Background Studies

Compared to the field of higher education in Australia, there has been only limited work on the economic benefits of participation in VET, and in TAFE in particular. In addition to the usual problems of conceptualising and measuring the benefits and costs of education, there are particular difficulties in analysing VET. These problems include the limited availability of data on VET participants, the wide age range of VET students, and the diversity of VET programs.

The limited Australian research that has been done has produced mixed results. Blandy et al (1979) in the review of research conducted during the 1960s and 1970s suggested that 'lower-level post-secondary courses are probably a better investment at present than degree or diploma courses'(p. 142). Miller (1982) used 1976 Census data to conclude that the rates of return to trade qualifications were high relative to most other forms of post-school education. Hatton and Chapman (1989) analysed data from the 1973 ANU Social Mobility Survey and concluded that 'the rate of return on apprenticeships and trade training was probably no higher than other forms of post-school training and may have been somewhat lower' (p.149). Sturman and Long (1990) examined earnings at age 25 for members of ACER's longitudinal study, Youth in Transition. After controlling for social background, educational achievements and educational attainments, they found that those who had undertaken an apprenticeship through TAFE received $30 more per week (after tax, in 1986 dollars) because of the apprenticeship. There was, however, no evidence that those who had undertaken a non-apprenticeship TAFE course received a higher income because of their course.

More recently, McGuire (1994) reported changes over the 1955 to 1990 period in the estimated returns to apprenticeships for persons remaining in the metals industry in New South Wales. Although the estimated returns were lower than those found by Miller (1982) for trade qualifications in general, they still ranged from 17 to 26 per cent. This indicated that 'apprenticeship appears to be a profitable investment yielding considerably higher returns than most investments in physical capital' (McGuire 1994, p.247).

The review by Lewin (1993) of international evidence on the outcomes of technical and vocational education, principally at secondary school level, also provides mixed results on whether vocational education produced positive returns. It should be cautioned, though, that this is an area where international comparisons of research findings are particularly problematic due to structural differences among countries in VET and the labour market.

To a large extent differences among the Australian studies in their assessment of the value of vocational education can be attributed to different time periods, different data sources and different methodologies. A further cause of difference may be that the Australian studies have typically had to use datasets that have aggregated a number of different types of vocational education into one or two broad groups of post-school qualifications, and the basis of this aggregation has itself changed over time as new types of programs have been developed. Changes over time in the proportions of different qualifications that comprise those broad categories could lead to apparent inconsistencies in the aggregate results for vocational education as a whole.

The need to disaggregate the various types of vocational education is illustrated by Bennet et al (1995). They concluded that in the United Kingdom the financial incentives to pursue vocational qualifications depend on the level of qualification that is sought. Their results indicated that although higher vocational qualifications generally offer attractive lifetime earnings prospects, the expected earnings from lower level vocational qualifications are generally below those of school-leavers with no post-school qualifications.

2. Types of Educational Qualification

In 1993 the ABS introduced a more fine-grained classification of educational qualifications (the ABSCQ) than had been used previously. The new framework provided for 7 levels of post-school educational attainment:

- higher degree;
- postgraduate diploma;
- bachelor degree;
- undergraduate diploma;
- associate diploma;
- skilled vocational qualifications; and
- basic vocational qualifications.

The dataset used in the present paper employed this new classification and thus allowed a more detailed analysis of the impact of different types of educational qualification than had previously been the case. The definitions of the various levels are provided in Appendix 1.

The other important advantage of the 1993 ABS survey is that it collected information on the second highest level of qualification where people held more than one qualification. The 1993 survey revealed that around 20 per cent of employees held more than one post-school qualification. Studies that refer just to the highest level of educational attainment tend to overstate the returns to that qualification. For example, where a person holds both TAFE and university qualifications it is important not to attribute their (presumably) higher earnings to just the university qualification. The present analyses use statistical controls for second-highest level of educational attainment.

3. The Role Of Training

Due to data limitations the Australian studies cited above have been unable to examine the impact on earnings of another important element of VET, employment-based training. Nevertheless most studies conclude that training plays a major role in accounting for the higher earnings of people with high levels of formal education, and the growth of those earnings over time. Formal education and employment-based training are highly complementary.

The relationship between prior educational attainment and participation in different forms of training was examined by McKenzie and Long (1995) using the 1993 ABS survey. After controlling for a wide range of personal background, occupational, industry and enterprise characteristics, educational attainment was found to have a significant impact on employee participation in both formal and on-the-job training. The paper concluded that 'over and above characteristics of the job, possession of relatively high educational qualifications stimulates employees to demand formal training or employers to supply it, or both'.

Estimation of the impact of employment-based training on productivity and earnings is more difficult than for education because of greater heterogeneity in training experiences, quantity of training and the age at which training is received. Stern (1994) summarised US and European empirical studies that support the conclusion that firm-based education and training leads to higher earnings over time, although the precise causal relationships are unclear. Longitudinal Australian data on the relationship between training and wages for young workers were analysed by Chapman and Tan (1992). They concluded that there was a positive relationship between the incidence of participation in training and wage growth, although the return fell with the length of time since training, which implies depreciation of the value of training. Importantly, Chapman and Tan concluded that formal training has a much larger impact on wages in industries experiencing rapid technological change. Barron et al (1989) concluded that about half the returns to training are received by workers as higher earnings, which implies that the costs are also likely to be shared.

The 1993 ABS survey does not allow for separate estimation of the impact of training participation on earnings since the data on training and earnings are contemporaneous (Wooden and Baker 1995). Although the data indicate that participation in training is correlated with earnings the direction of causation cannot be determined. Longitudinal data on training experiences over a considerable period of time are needed to isolate the impact of training on earnings.

4. Data Source

The ABS *Survey of Training and Education* (STE) was conducted in April and May 1993. The survey covered 15-64 year-old labour force members including employees, the unemployed, those marginally attached to the labour force, employers and the self-employed. Face-to-face interviews were used to collect data on a wide range of demographic, labour market, education and training variables (ABS, 1994). Appendix 1 defines terms from the ABS survey that were used in the analyses reported here. Some 24 500 completed interviews were conducted. The ABS has released unit record data on 20 889 persons from the survey.

The analyses in this paper focus on full-time employees aged 20-64 at the time of the 1993 survey. Those aged less than 20 years were excluded because of the limited time between their formal education and entry to the labour market. Part-time employees were not included in these preliminary analyses because of the great variety of conditions under which they work. Part-time employment is particularly important for females (the survey reported 42 per cent of female employees aged 20 or over were part-time, compared to just 7 per cent of males), and it would be important to analyse separately the factors that influence part-time employees' earnings. Also excluded from the analyses were those who were paid in kind or for whom information on earnings was missing (about 800 persons or almost 4 per cent of the whole group).

After these exclusions, the group of employees for analysis comprised 5800 full-time male employees and 3200 full-time female employees, a total of 9000 persons or 43 per cent of those for whom unit record data were available. In weighted terms, these particular sample members represented a population of around 4 million employees.

5. Age-Earnings Profile

The Australian and overseas research cited earlier has generally been based on age-earnings profiles of people with different levels of educational qualifications derived from cross-sectional data. It is well documented in Australia and elsewhere that the age-earnings profiles of employees with high levels of education rise more steeply, and peak at a later age, than the profiles of workers with low educational attainment. This pattern is also evident in the 1993 ABS survey.

Table 1 presents mean weekly earnings for full-time male employees grouped by age. For full-time male employees as a whole mean weekly earnings were $634. There was a strong positive relationship between level of educational attainment and mean earnings. For example, those with a bachelor degree averaged $836 per week, while those who left school at age 15 or under averaged $552 per week, a differential of 51 per cent. Moreover, the earnings gap between employees with different levels of educational attainment widened with age. At age 25-34, for example, the earnings differential between these two groups averaged 47 per cent. By age 55-64 it had widened to 103 per cent.

Figure 1 plots the age-earnings profiles from Table 1 for the six levels of educational attainment with the largest number of employees. Three broad features are evident:

- The earnings of all groups are quite similar at age 20-24, and also at age 25-34 (except for degree holders whose earnings have accelerated even by that stage). This suggests that studies of the financial benefits associated with different levels of education need to wait for quite a few years after graduation for the benefits to become evident.
- The earnings differentials of those with bachelor degrees and associate diplomas continue to rise with age, whereas the earnings of those with skilled vocational qualifications rise more slowly and peak at age 45-54. Interestingly, in most age groups the average earnings of those with basic vocational qualifications lie above those who have skilled vocational qualifications. One possible explanation for this is that those working in the skilled trades may face wage structures that place ceilings on their earnings. It is also possible that the main financial benefits of skilled vocational qualifications go to those who become self-employed or employers of others. Around 10 per cent of the ABS sample members were self-employed, and 6 per cent were employers: an analysis of the age earnings profiles of these groups by educational attainment would be of particular interest.
- Although the average earnings of those who participated in the final year of secondary school lie above the earnings of early school leavers, the differential tended to narrow with age. This suggests that, while participating in the final year of secondary schooling does have financial benefits, the benefits are most marked when people then go on to obtain post-school qualifications.

Table 2 and Figure 2 present the age-earnings profiles of female full-time employees. The age-earnings profiles of females show a broadly similar pattern to that of males. As for males, the groups with high initial education earn more, and their earnings generally grow at a faster pace. There are some marked differences from the male profiles.

- At all ages and for all educational groups females earn less than males. Even when females hold the same qualifications as males they tend to be concentrated within lower paying occupations and within lower paying segments of the same occupation (Karmel 1995). As well, it is likely that the greater incidence of interrupted careers experienced by many females means that they earn less than males with similar qualifications, but with more continuous job experience.
- The earnings profiles of female employees are generally flatter than for males, peak at an earlier age, and decline in the 55-64 age group (although the small number of cases suggests caution in the latter regard).

6. Analytic Model

Not all of the differences in earnings between employees with different levels of education can be attributed to education alone. Earnings are a function of a range of factors including ability, perseverance, educational qualifications, training, experience, age, type of occupation and industry, and so on. Figure 3 contains a model which attempts to isolate the impact of education from other factors that affect earnings. It is drawn from the general literature on status attainment and earnings functions, although it is clearly constrained by the variables available from the 1993 ABS survey. For example, no data are available on ability or pattern of work organisation, both of which could be expected to affect earnings.

The blocks of variables are ordered from left to right to reflect the hypothesis that personal background factors affect educational attainment, which in turn affects type of employment, which in turn affects earnings. The effects of education on earnings are hypothesised to operate both directly and indirectly through affecting the type of employment.

Ordinary least squares regression was used to model these relationships using a series of dummy variables. The results are presented by reference to those employees who left school at age 16 or over, but who participated in year 12, and who hold no post-school qualifications. This reference group comprises 12 per cent of full-time male employees and 14 per cent of full-time female employees. More detail about these analyses is provided in Appendix 2.

7. Results

Table 3 shows the results of the multivariate regression analyses separately for male and female full-time employees. The initial focus of the table is the block of results headed *Education, age and ethnicity*. As Appendix 2 explains, the results in this block should be read as *the effect on usual weekly earnings of the particular educational attainment after controlling for other educational qualifications, age and ethnicity*. The values show how much more per week those who hold the particular qualifications can expect to earn relative to the reference group (those who left school at age 16 or over, who did not complete secondary school and who hold no post-school qualifications).

For example, male employees with a degree on average earned $236 more per week than the reference group, those with an associate diploma $97 more and so on. The negative result for early school leavers (-$36) indicates that those who leave before age 16 earn less than the reference group, on average. In general, the higher the level of post-school qualification, the greater is the influence on earnings. The notable exception is for full-time male employees who hold skilled vocational qualifications. The analyses indicate that, on average, the earnings differential associated with such qualifications ($25) is lower than for simply competing the final year of secondary school ($53). Discussion earlier in the paper suggested some possible reasons for this result.

The pattern of results for full-time female employees is broadly similar: higher educational qualifications are associated with a positive earnings differential compared with the reference group. However, two differences are clear. First, the earnings differential for females is generally lower at each level of educational attainment than for males, although since female earnings are normally lower, the proportionate impact of higher qualifications is probably similar for the two groups. Second, for females skilled vocational qualifications provide a higher earnings differential ($67) than enrolling in the last year of secondary school ($45) or obtaining basic vocational qualifications ($36). Analysis of the reasons for the different patterns of results for males and females requires more detailed analysis of particular fields of employment and their relationship with fields of initial vocational education than has been possible here.

The earnings differentials shown in Table 3 should not be interpreted as relative rates of return to the various levels of educational attainment. Estimates of rates of return need data on the costs of obtaining the various forms of qualification along with adjustments for the probability of labour force participation, unemployment and so on. For example, although university degrees are associated with the highest earnings differentials, those courses are longer and more costly than any of the others shown in the table. For instance, although the earnings differentials for skilled vocational qualifications for males appear relatively low, the costs of obtaining such qualifications are also likely to be relatively low because people commonly combine such studies with employment.

8. Conclusion

This paper has used data from the 1993 ABS *Survey of Training and Education* to examine the influence of different forms of post-school education on the earnings of full-time employees.

The analyses indicate that completion of post-school qualifications does have a positive impact on earnings, other factors equal. The earnings differentials are highest for degrees, associate diplomas, skilled vocational qualifications (for females) and basic vocational qualifications (for males). Except for basic vocational qualifications held by full-time female employees, the earnings differentials are greater than for those who did not go beyond the final year of secondary school. These results provide broad support for efforts to lift education participation rates in Australia.

References

ABS (Australian Bureau of Statistics) 1994. *Training and Education Experience Australia 1993*, Cat. No. 6278.0, Canberra.

Barron, J., Black, D. and Lowenstein, M. 1989. "Job Matching and On-the-Job Training", *Journal of Labour Economics*, 7(1), 1-19.

Bennett, R., Glennerster, H. and Nevison, D. 1995. "Investing in Skill: Expected Returns to Vocational Studies", *Education Economics*, 3(2), 99-117.

Blandy, R., Hayles, J. and Woodfield, A. 1979. "The Economics of Education in Australia 1962-77" pp. 109-169 in F. Gruen (ed.), *Surveys of Australian Economics*, George Allen and Unwin, Sydney.

Chapman, B. and Tan, H. 1992. "An Analysis of Youth Training in Australia, 1985-88: Technological Change and Wages", pp. 99-124 in R. Gregory and T. Karmel (eds.), *Youth in the Eighties: Papers from the Australian Longitudinal Survey Research Project*, Centre for Economic Policy Research, Australian National University, Canberra.

Hatton, T. and Chapman, B. 1989. "Apprenticeship and Technical Training", pp. 130-157 in D. Pope and L. Alston (eds.), *Australia's Greatest Asset: Human Resources in the Nineteenth and Twentieth Centuries*, Federation Press, Annadale, N.S.W.

Karmel, T. 1995. *Educational Choice and the Gender Wage Gap in the Australian Labour Market*, paper presented to the 25th Annual Conference of the Australian Association for Research in Education, November, Hobart.

Lewin, K. 1993. "Investing in Technical and Vocational Education: A Review of the Evidence", *The Vocational Aspect of Education*, 45(3), 217-27.

McGuire, P. 1994. "Rates of Return to Apprenticeship in the Metal Industry, 1955-1990", *Australian Bulletin of Labour*, 20(3), 235-50.

McKenzie, P. and Long, M. 1995. "Educational Attainment and Participation in Training", paper presented to the NBEET/CEPR Conference on Efficiency and Equity in Education Policy, September, Canberra.

Miller, P. 1982. *Education, Employment and Earnings in the Australian Labour Market*, PhD Thesis, Australian National University, Canberra.

National Center for Education Statistics 1994. *Vocational Education in G-7 Countries: Profiles and Data*. U.S. Department of Education, Washington, D.C.

Stern, D. 1994. "Market Failure in Firm-Based Education and Training", Vol. 6, pp. 3614-17 in T. Husén, T. and T.N. Postlethwaite (eds.), *International Encyclopedia of Education*, Second Edition, Pergamon, Oxford.

Sturman, A. and Long, M. 1990. *Participation in TAFE*, Australian Council for Education Research (mimeo), Hawthorn, Victoria.

Wooden, M. and Baker, M. (eds.) 1995. *Small and Medium Sized Enterprises and Vocational Education and Training*, National Training Markets Research Centre, Adelaide.

Appendix 1: Definition Of Terms From The Survey

Associate diploma	The entry requirement is usually the completion of Year 12 or the completion of Year 10 and a prerequisite certificate course. The duration of study ranges from 1 to 2 years full-time study or equivalent.
Bachelor degree	The entry requirement is the satisfactory completion of Year 12 or its equivalent. The duration of study ranges from 3 to 6 years full-time study or equivalent.
Basic vocational qualifications	Often require Year 10 completion, however many courses have no formal entry requirements. The duration of study ranges from 1 semester to 1 year of full-time study or equivalent.
Casual employees	Employees who were entitled to neither paid holiday leave nor paid sick leave with their main period employer.
External training courses	Training which is organised and conducted by training or educational establishments, agencies or consultants other than the respondent's employer/business. It excludes study for an educational qualification.
Full-time employee	Persons who usually worked 35 hours or more per week in their job with their main period employer.
Higher degree	Includes doctorates and masters degrees. The minimum entry requirements are usually a masters degree or first class honours for a doctorate and first class honours for a masters degree. The duration of study is a minimum of 2 to 4 years for a doctorate and 2 years full-time or equivalent for a masters degree.
Highest level of secondary	The highest level of secondary schooling (or equivalent) offered by the education system at the time the person left school.
In-house training courses	Training organised by a person's employer or business primarily for their own staff and using the employers' or business' staff or training consultants.
Permanent employees	Employees who were entitled to either paid holiday or paid sick leave with their main period employer.
Postgraduate diploma	Includes Graduate Certificates. The entry requirement is usually the successful completion of a bachelor degree or an undergraduate diploma. The duration of study ranges from 6 months (for a Graduate Certificate) to 1 year full-time study or equivalent.
Sector of employer	Relates to an employee's job with his or her main period employer.
Size of business	The number of persons employed by a respondent's employer/own business throughout Australia.
Size of location	The number of persons employed at the location of the respondent's job with his or her employer/own business.
Skilled vocational qualifications	The entry requirement is usually the completion of Year 10 or its equivalent. The duration of study is 2 to 4 years, and typically involves some on-the-job training.
Undergraduate diploma	The entry requirement is usually the successful completion of Year 12 or its equivalent. The duration of study is 3 years full-time study or equivalent.

Usual weekly earnings	The amount of usual weekly pay for wage or salary earners working with their main period employer, before taxation or other deductions were made

Source: ABS (1994)

Appendix 2: Notes For Tables

These notes present further information about the figures and tables. Some of this information is generic and some is specific to particular figures or tables. The generic information is presented first and the more detailed notes follow. All information is derived from the 1993 *Survey of Training and Education* conducted by the Australian Bureau of Statistics.

Usual weekly earnings is available for persons who had a wage or salary job in the 12 months preceding the interview ie from late 1992 to late 1993. Information is provided in categories starting at under $80 and then in categories of $40 up to $1159. The upper category is $1160 and over. Point estimates within categories were made by interpolation using the relative percentages in categories immediately above and below the category of interest. For instance, if one per cent of the sample was in the category $160-$199 and two per cent in the category $240-$279, then the point estimate for the category $200-$239 was $226.67. The midpoint, $40, was used for the bottom category. Estimation for the upper category, $1160 and over, was more problematic.

Calculation of the point estimate was based on half of the percentage in the top category divided by half of the mean of the percentage in the three preceding categories multiplied by $40. For males, the percentage in the highest category was 4.7 per cent. The preceding three categories had percentages of 1.4, 1.0 and 1.5 respectively. The mean is 1.3 per cent. Therefore, every additional $40 takes 1.3 per cent of the sample in this part of the distribution. Half of this value, ie 0.65, is used given that the income distribution is known to skew to the right. The 4.7 per cent corresponds to 7.2 groups of 0.65 per cent i.e. the distribution within the upper category is assumed to be rectilinear from $1160 to 7.2*$40 and therefore has a midpoint of $1160 + 3.6 * $40. This estimated midpoint was used as the point estimate of earnings for this category.

The estimation of a point value for the upper category is important because mean earnings and effect statistics will be sensitive to an extreme category containing a reasonable percentage of the sample. This procedure should be able to be refined, possibly by using published information on income distribution.

Values in all tables and figures are based on respondents aged 20 and over.

All values were calculated using weights provided by the ABS. The weights modify the sample so that it more closely resembles the population. The weights provided by the ABS are referenced to the population totals. For the purposes of these analyses, the weights were re-standardised to the sample totals. Use of weights implies that there may be instances in which total means presented in a table cannot be calculated from the sub-total means weighted by number of cases.

Table 3

The analyses presented in Table 3 result from six separate OLS regression equations which consisted of three equations estimated separately for males and females. The following is a description of these equations.

Education should be read as *The effect on usual weekly earnings of the particular educational attainment controlling for other educational qualifications*. The block of variables included in education is more extensive than is usual in analyses such as these. It includes dummy variables representing eight categories of highest qualification (higher degree, postgraduate diploma, bachelor degree, undergraduate diploma, associate diploma, skilled vocational qualification, basic vocational qualification, other post-school qualification), the corresponding dummy variables for second highest qualification, participation in the final year of secondary school with no post-school qualifications and

leaving secondary school by age 15 with no post-school qualification. The excluded category (and therefore the basis of comparison) is provided by those who participated in secondary school beyond age 15 but did not participate in the final year of secondary schooling.

Participation in the final year of secondary schooling does not necessarily imply completion. Information on the level of secondary schooling was only available for those with no post-school qualifications. Therefore, income effects for qualifications which require completion of the final year of secondary schooling as a prerequisite include some component due to that prerequisite. Hence, there is likely to be some over-estimation of the income effects associated with qualifications from such courses (higher degree, postgraduate degree, degree, and possibly diploma and associate diplomas) compared with courses which do not (probably vocational courses). Any over-estimation of income effects will be reduced by the inclusion of second highest qualification.

For males the R-square for this model was 0.17, which was statistically significant. For females the R-square was 0.28, which was also statistically significant.

Education, age and ethnicity should be read as *The effect on usual weekly earnings of the particular educational attainment controlling for other educational qualifications, age and ethnicity*. Age was entered as a set of four dummy variables, each corresponding to a particular age group. The use of dummy variables allowed for the curvilinear relationship between age and income shown in Tables 1 and 2. Ethnicity is measured by whether the respondent was born in a non-English-speaking country or not.

For males the R-square for this model was 0.27, which was statistically significant. For females the R-square was 0.34, which was also statistically significant.

Education, age, ethnicity and employment characteristics should be read as *The effect on usual weekly earnings of the particular educational attainment controlling for other educational qualifications, age, ethnicity and employment characteristics*. The employment characteristics included in this model are shown in Figure 3. In all cases apart from *usual hours of work per week* the characteristics were represented in the model by dummy variables.

For males the R-square for this model was 0.49, which was statistically significant. For females the R-square was 0.49, which was also statistically significant.

Three statistics are presented for each cell in Table 3. *Effect* is the unstandardised regression coefficient, which measures the effect (in dollars) of a particular educational attainment on usual weekly income controlling for specified other variables. *Beta* is the corresponding standardised regression coefficient, which measures the effect (in standard deviations) of a change of one standard deviation in a particular educational attainment on usual weekly income controlling for specified other variables. The *t-statistic* reflects the level of statistical significance. A value greater than two can be taken as indicating that the corresponding effect and beta values are statistically significantly different from the earnings of those who participated in secondary school after age 15, but not in the final year of secondary schooling.

Most of the estimates for males are based on 5791 cases for which information on income was available. Income was missing for 402 cases. For the equation which included employment characteristics, information was unavailable for a further 236 cases for at least one variable. Hence estimates were based on 5555 cases. The corresponding values for females were 3237 cases with earnings information, 199 missing information on earnings, and a further 140 cases missing at least some information on employment characteristics.

Table 1: Educational Attainment and Usual Weekly Earnings by Age: Male Full-Time Employees

Educational Attainment	Age					Total
	20-24	25-34	35-44	45-54	55-64	
Higher Degree						
Mean ($)	-	893	849	974	943	917
sd	-	176	264	304	323	279
n	-	13	19	29	8	69
Graduate Diploma						
Mean ($)	-	864	943	866	1073	922
sd	-	217	272	322	249	278
n	-	6	27	12	3	48
Bachelor Degree						
Mean ($)	559	801	860	950	1046	836
sd	120	262	267	271	248	277
n	48	219	215	106	25	613
Undergraduate Diploma						
Mean ($)	478	681	775	799	732	750
sd	47	149	231	220	256	218
n	3	39	82	35	4	163
Associate Diploma						
Mean ($)	478	646	764	798	827	721
sd	87	256	225	265	249	258
n	13	131	135	76	24	379
Skilled Vocational Qualification						
Mean ($)	491	593	652	676	584	612
sd	130	186	215	254	214	214
n	202	480	487	349	135	1653
Basic Vocational Qualification						
Mean ($)	417	578	772	737	674	645
sd	143	156	294	241	229	251
n	30	80	71	58	17	256
Other Post-School Qualification						
Mean ($)	493	823	958	872	411	812
sd	199	306	345	310	338	359
n	7	21	25	15	6	74
Attended Highest Level of Secondary School						
Mean ($)	421	587	700	717	554	589
sd	136	193	250	298	232	242
n	202	247	224	95	29	797
Left school aged 16 or over						
Mean ($)	407	526	621	690	629	548
sd	126	181	224	290	299	225
n	136	282	179	90	25	712
Left school aged 15 or under						
Mean ($)	409	545	561	601	516	552
sd	145	188	197	238	184	210
n	71	207	268	305	176	1027
Total						
Mean ($)	448	613	697	710	607	634
sd	140	222	256	281	260	254
n	712	1725	1732	1170	452	5791

See *Notes to Figures and Tables*.

Table 2: Educational Attainment and Usual Weekly Earnings by Age: Female Full-Time Employees

Educational Attainment	Age					Total
	20-24	25-34	35-44	45-54	55-64	
Higher Degree						
Mean ($)	--	697	772	766	980	745
sd	--	179	406	152	--	228
n	--	7	3	7	1	18
Graduate Diploma						
Mean ($)	618	622	800	748	1049	740
sd	--	123	168	185	--	179
n	1	8	14	4	1	28
Bachelor Degree						
Mean ($)	521	670	725	754	570	672
sd	119	206	200	203	162	206
n	68	173	115	80	11	447
Undergraduate Diploma						
Mean ($)	501	637	685	706	584	651
sd	128	129	165	175	176	166
n	31	82	117	59	15	304
Associate Diploma						
Mean ($)	445	537	598	623	476	536
sd	146	159	164	299	143	187
n	42	56	43	21	4	166
Skilled Vocational Qualification						
Mean ($)	437	505	573	611	554	537
sd	109	162	157	160	165	165
n	30	79	46	56	11	222
Basic Vocational Qualification						
Mean ($)	422	514	494	531	628	492
sd	127	161	148	205	133	164
n	87	121	117	64	8	397
Other Post-school Qualification						
Mean ($)	452	746	613	678	526	653
sd	168	308	155	146	109	260
n	8	27	14	8	3	60
Attended Highest Level of Secondary School						
Mean ($)	422	524	501	458	464	477
sd	104	146	177	150	135	146
n	182	192	102	42	14	532
Left school aged 16 or over						
Mean ($)	410	455	461	457	532	447
sd	96	107	142	98	85	115
n	116	166	117	59	11	469
Left school aged 15 or under						
Mean ($)	396	432	458	438	378	433
sd	89	127	134	135	161	135
n	49	127	172	195	52	594
Total						
Mean ($)	435	541	556	551	485	523
sd	119	182	192	207	184	185
n	614	1037	860	595	131	3237

See *Notes to Figures and Tables*

Table 3: Educational Attainment and Usual Weekly Earnings by Gender: Full-Time Employees

	Educational Attainment					
Model and Effects	**Bachelor Degree**	**Associate Diploma**	**Skilled Vocational**	**Basic Vocational**	**Last Year Sec. School**	**Left before Age 16**
Males						
Education						
Effect ($)	246	131	42	53	41	4
Beta (sd)	0.29	0.13	0.08	0.04	0.06	0.01
t-statistic	17.50	8.58	4.01	2.88	3.49	0.36
Education, age, ethnicity						
Effect ($)	236	97	25	53	53	-36
Beta (sd)	0.28	0.09	0.04	0.04	0.07	-0.05
t-statistic	17.82	6.72	2.50	3.09	4.79	-3.37
Education, age, employment						
Effect ($)	133	56	25	30	16	-19
Beta (sd)	0.16	0.05	0.05	0.02	0.02	-0.03
t-statistic	10.92	4.43	2.83	2.00	1.61	-2.04
Females						
Education						
Effect ($)	169	61	73	35	30	-14
Beta (sd)	0.31	0.07	0.10	0.06	0.06	-0.03
t-statistic	14.46	4.18	5.51	3.14	2.99	-1.42
Education, age, ethnicity						
Effect ($)	177	67	67	36	45	-32
Beta (sd)	0.32	0.08	0.09	0.06	0.09	-0.07
t-statistic	15.75	4.77	5.27	3.34	4.64	-3.28
Education, age, ethnicity, employment						
Effect ($)	99	33	55	15	20	-13
Beta (sd)	0.18	0.04	0.08	0.03	0.04	-0.03
t-statistic	8.78	2.54	4.68	1.47	2.29	-1.50

See *Notes to Figures and Tables*

Figure 1 Age - Earnings Profiles by Educational Attainment: Male Full-time Employees

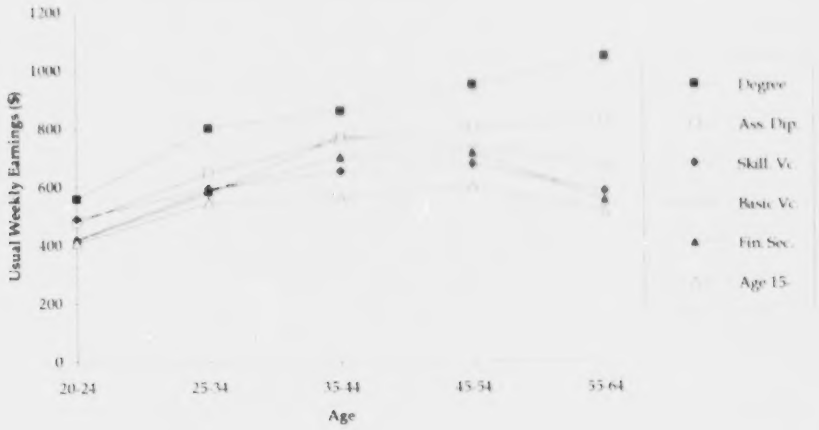


Figure 2 Age - Earnings Profiles by Educational Attainment: Female Full-time Employees

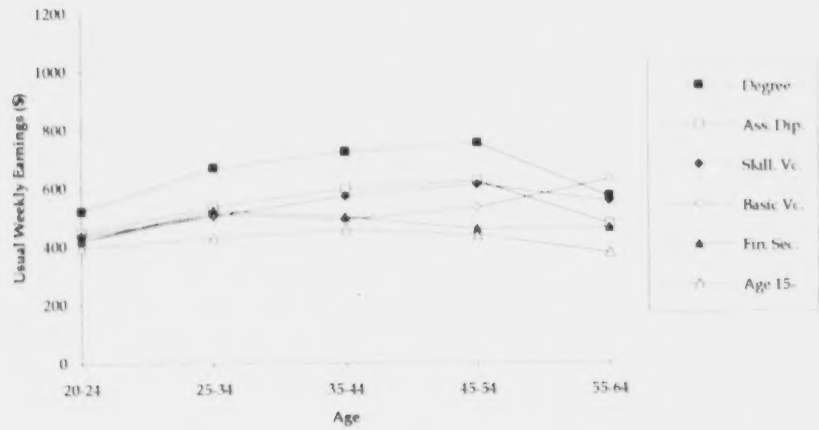
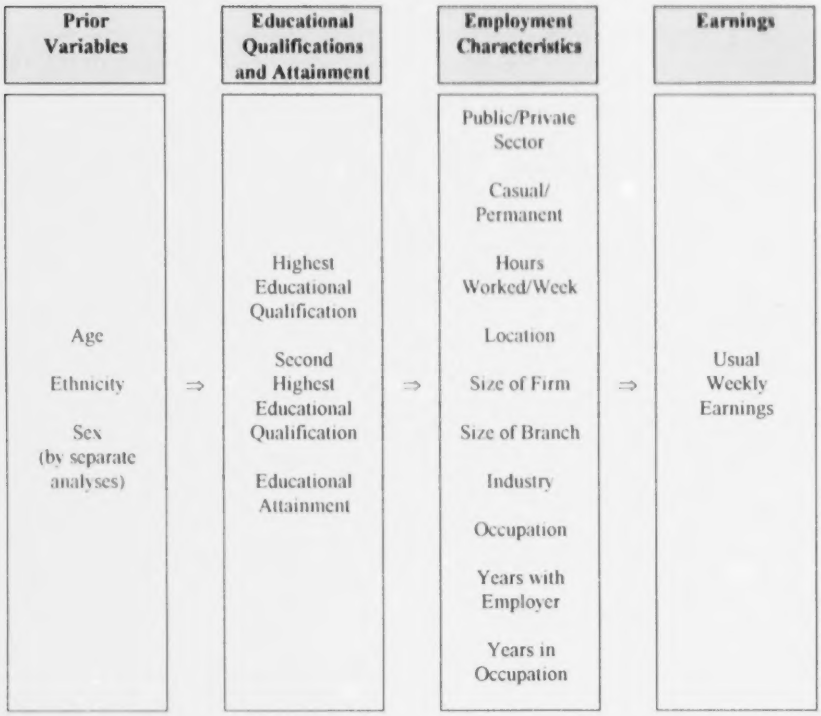


Figure 3: Simplified Model Underlying the Analyses



THE GLOBALISATION PROCESS AND CHANGES IN THE AUSTRALIAN WORKFORCE BETWEEN 1986 AND 1991: IMPLICATIONS FOR EDUCATION AND TRAINING

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1. Rationale

This paper reports on a project that is the continuation and further development of work that was initially conducted for inclusion in the 1994 ANTA Research Advisory Council conference on Research Priorities in Vocational Education and Training, and was subsequently reported on at the 1995 ANTARAC Research in Progress conference. We have, in the process, developed what amounts to a sizeable research agenda based upon the original Reichian classification of occupations and its application to available labour market data in Australia.

What we have sofar, however, is strictly a work-in-progress report, and we are still only part of the way through our agenda for this particular piece of research. The results it is yielding, however, are interesting in themselves.

In this paper Section 2 outlines the background to this research program and establishes the core proposition i.e. that the criteria for classification of occupations first suggested by Robert Reich provides an extremely useful way of analysing the underlying structure of occupations and the impact that the changing global environment is having upon them. Section 3 outlines the methodology used to apply the Reichian criteria to Australian occupational data. Section 3 also looks at those data sources and in particular at the source used in the current phase of the project. Section 4 outlines briefly some of the major findings to date. Section 5 sketches out the various pathways that will be taken to process this project further, and Section 6 briefly addresses the implications this research has for vocational education and training.

2. Background

The globalisation process (as distinct from internationalisation) is only a recent phenomenon, and definitions of it vary. It is useful, however, to think of it as .....

> "a set of conditions in which an increasing fraction of value and wealth is produced and distributed worldwide through systems of interlinking private networks" (OECD 1992)

But see also Lloyd (1995) and Fagan and Webber (1994).

Key elements in the process appear to be:

- the new information technologies;
- deregulation and interlinking of the world financial markets;
- the rapid expansion of the operations of large multinational enterprises (MNEs);
- the development, under the umbrella of MNEs, of flatter, less hierarchical, more flexible and autonomous management structures, and of vast networks of often shortlived operational alliances and coalitions that cross national boundaries; and
- the development, also through the operations of MNEs, of what UNCTAD (1993) describe as "integrated international production strategies".

Increasingly the trend is for:

- international trade to grow faster than world production (GDP);
- international trade between advanced industrial countries, especially the major blocks of Europe, North America and Japan, to grow faster than international trade in general;
- international trade in *intermediate* goods and services to grow faster than trade in either commodities or finished goods;
- *Intrafirm* (MNE) trade in intermediate goods and services to grow faster than international trade in intermediate goods and services in general; and
- foreign direct investment (FDI), increasingly as a *two-way* flow, and especially between the major blocks, to grow at a much faster rate than international trade.

For more detail see Fagan and Webber (1994), EPAC (1995), UNCTAD (1993) and BIE (1993).

2.1 How is Australia Placed in the Global Economy?

Australia has a number of conspicuous advantages in its participation in the global economy. It is resource-rich and located close to a region of rapid economic development that has a high propensity to trade. It has a comparatively well-educated and skilled population that is English speaking (the *lingua franca* of the global economy) and receptive to technological innovation. It is politically stable, and has governments that espouse the doctrines of free trade, deregulation and economic liberalism.

It has also, however, a number of significant drawbacks. It has small and fragmented domestic markets, relatively high infrastructure costs and comparatively high labour costs. It has low levels of national savings by the standards of comparable industrialised high income countries.

Maglen (1994) reviewed the available evidence on how successfully Australia has participated in the global economy over recent years and found the picture to be quite mixed. The EPAC papers (1995) and Fagan and Webber (1994) come to much the same conclusion. BIE (1995b), as part of an ongoing international benchmarking review of Australia's infrastructure reforms, has also submitted a mixed report card.

Lloyd (1995) reports that foreign direct investment (FDI) into Australia has been growing at a slower rate than for the world as a whole, indicating that its share has been falling. He also indicates that FDI is a significant two-way flow for Australia (although inward flows are greater than outward flows). BIE (1995a) provides a valuable analysis of Australia's FDI outward flows. A selection of relevant economic indicators for the period 1986 to 1991 are available from the authors (for the list of indicators see Annex 1).

2.2 What Impact is the Globalisation Process Having Upon Employment Patterns in Australia?

It must be stated from the outset that this research program, to date, has not attempted to answer this question directly. That will come later. What we have done sofar is to adopt a framework which is consistent with, and is derived from, the globalisation process, and sought to examine the trends in employment that this framework allows us to uncover. To the extent that these trends are what we would expect to be developing as Australia becomes more engaged in the global economy they provide an inferential answer to the question. Other interpretations, of course, could be put on these trends since the factors at work shaping employment patterns in Australia are complex, and not all of them are directly attributable to the processes of globalisation.

Nevertheless we consider the framework to be a useful one. It is taken from the classification of jobs suggested by Robert Reich in his book *The Work of Nations* (1991), in which he too ponders the future of work in the rapidly changing global environment.

Reich suggests a three-way classification of jobs that is based upon the nature and extent of the exposure workers have to global competitive forces. The three groups he identifies are: routine production workers; in-person service workers; and symbolic analysis.

Routine production workers:

- engaged in routine occupations generally associated with high volume production of standardised products and administration;
- can be both white collar and blue collar;
- includes their foremen, supervisors and line managers;
- high degree of exposure to global competitive forces;
- wages and other costs of employment very important to competitive position; and
- threatened also by automation.

In-person service workers:

- workers whose primary task is dealing face-to-face with the ultimate beneficiaries of their services – customers, clients, patrons, patients, pupils, passengers, students, suppliers ..... whoever;
- spread across all industries, and across both the public and private sectors;
- largely insulated from direct global competition;
- threatened by automation, casualisation of employment and by activities in the informal sector; and
- level of employment ultimately dependent upon the success with which routine production workers and symbolic analysts compete in the global economy.

Symbolic analysts:

- workers primarily involved in the manipulation of symbols – data, words, oral, audio and visual representations;
- their work is mostly conceptual – involving creative and/or critical thought. Three key areas in which they are employed are problem solving, problem identifying and strategic brokering; and
- high degree of exposure to global competitive forces, although it is generally the expertise and the product they can offer, and the speed, flexibility, and adaptability they can display, that are important, rather than wages and other cost factors.

To the extent that Australia is integrating into the global economy, we can expect to observe certain employment trends in the Australian workforce. The employment of symbolic analysts will tend to be the smallest group in the workforce, with the other two of roughly the same size. The employment of routine production workers is likely to be stagnant and in decline. The employment of symbolic analysts is likely to be growing most rapidly. The employment of in-person service workers is also likely to be growing quickly (overall not as quickly as symbolic analysts, but most rapidly on a part-time and casual basis). The earnings of routine production workers are likely to be growing only sluggishly and to have a flat age profile. The earnings of symbolic analysts on the other hand are likely to be growing most rapidly and to have a steep age profile. The earnings of in-person service workers are likely to be growing at a rate somewhere between those of symbolic analysts and routine production workers.

3. Methodology and Data Sources

To test the effectiveness of the Reichian criteria, it was decided to apply it to the Australian Standard Classification of Occupations (ASCO) and then to observe the patterns of employment and employment changes that these throw up. The structure of ASCO has four levels: major group, minor group, unit group, and occupation. They are arranged in the following manner:

Major Groups	Minor Groups	Unit Groups	Occupations
1 Managers and administrators	6	21	60
2 Professionals	9	62	191
3 Para-professionals	6	22	113
4 Tradespersons	9	60	275
5 Clerks	7	23	72
6 Salespersons and personal service workers	6	20	82
7 Plant and machine operators and drivers	4	40	162
8 Labourers and related workers	5	34	124
Total	**52**	**282**	**1079**

The application of Reichian criteria is only ever going to be arbitrary and indicative, given the multiplicity of tasks, skills and attributes involved in even the most simple and straight forward occupation. This suggests that the finer the distinctions between occupations the more accurate and unambiguous the application should be.

Two other factors are at work, however, that lead to a broader grouping of occupations being more appropriate. One is the dynamic nature of occupations - the more specific the definition used, the more likely it is to be altered over time by technological, organisational, economic and other factors. Broader classifications are in this sense more stable. The second and, in the end, most telling argument for the use of broader classifications in this exercise is that official data is much more readily available in this form. Occupations classified into ASCO Minor Groups, therefore, have been used throughout this exercise.

The 52 occupations it provides us with, however, are stable in another sense as well. An indicative allocation of the 282 unit groups, and the 1079 occupations into the three Reich categories actually does not differ greatly from the allocation at the minor group level.

Tables 1, 2 and 3 provide the distribution used in this project of ASCO minor groups into the three Reich categories.

Table 1: Indicative Allocation of ASCO Minor Occupational Groups into Reichian Occupational Categories – Symbolic Analysts

Major Group	Minor Group
Managers and administrators	general managers specialist managers legislators and elected government officials farmers/farm managers
Professionals	natural scientists miscellaneous professionals business professionals other teachers artists etc building professionals and engineers
Para-professionals	engineering/building technicians medical science technicians miscellaneous para-professionals aeronautical/maritime technicians
Sales and personal services	investment/insurance/real estate salespersons sales representatives

Table 2: Indicative Allocation of ASCO Minor Occupational Groups into Reichian Occupational Categories – In-Person Service Workers

Major Group	Minor Group
Managers and administrators	managerial supervisors (sales)
Professionals	health practitioners social professionals school teachers
Para-professionals	registered nurses police
Tradespersons	horticultural tradespersons
Sales and personal services	receptionists etc. tellers, cashiers etc miscellaneous salespersons personal service workers sales assistants
Plant and machine operators	road/rail drivers
Labourers and related workers	cleaners, miscellaneous labourers

Table 3: Indicative Allocation of ASCO Minor Occupational Groups Into Reichian Occupational Categories – Routine Production Workers

Major Group	Minor Group
Managers and administrators	managerial supervisors (general)
Tradespersons	building tradespersons electrical/electronics tradespersons metal/machining tradespersons vehicle tradespersons printing tradespersons other metal tradespersons food tradespersons miscellaneous tradespersons
Clerks	data/business machine operators stenographers/typists filing etc. clerks despatch etc. clerks miscellaneous clerks numerical clerks
Plant and machine operators	stationery plant operators machine operators mobile plant operators
Labourers and related workers	agricultural labourers factory hands construction/mining labourers

The initial analysis conducted using this classification that was reported in the 1994 conference paper relied upon published data from the ABS. The two ABS sources used were the regular *Labour Force Survey* and the periodic *Household Income and Expenditure Survey*. Together they provided the opportunity to ascertain the relative numerical importance of the three Reich categories amongst those employed, and to plot their changes over time. What they revealed was a pattern of change consistent with the expectations outlined above.

What the published data does not allow us to do, however, is take a close look at the composition of each of the Reichian categories of workers, and at where and how they are employed. The only cross tabulations of workers classified by occupation possible are by gender, by full time and total employment, and by earnings of fully employed workers.

The current phase of the project is based upon the unit file data available through the one per cent sample of the 1986 and 1991 Censuses. They too, group occupations into ASCO minor groups, but their great advantage is that they allow comparisons over time of cross classification of these occupational groups by a range of other variables. The variables selected for this exercise can be summarised and grouped in the following manner.

Workforce variables

- Labour force status
- Hours worked (full time/part time/casual)
- Sector of employment
- Industry
- Annual earnings

Personal Characteristics

- Gender
- Age
- Proficiency in English
- Language other than English spoken in the home
- Age left school
- Highest post-school qualification
- Field of highest post-school qualification
- When highest post-school qualification obtained
- Whether currently studying
- Where currently studying

Location variables

- State
- Metropolitan/non metropolitan
- Sydney/Melbourne/Other metropolitan

The ways in which these variables have been classified for the purposes of this exercise are contained in Annex 2.

Initially simple two-way cross tabulations between minor occupation groups classified into the three Reich categories, and each of the selected variables, were undertaken. Detailed results taken from the 1991 Census were reported upon in Maglen (1995). This paper extends that analysis a step further by comparing employment patterns in 1991 with those in 1986. Detailed results of this further analysis are summarised in the next section.

Fully detailed two-way cross tabulations have also been conducted for minor group occupations by industry and levels and fields of highest post-school qualifications. Three and four way cross classifications are also being conducted that allow, for example, the construction of age-earnings profiles for full-time, part time and casual workers by Reichian occupational categories. These will be the subject of our next report. In addition more statistically sophisticated analyses are also in preparation. We are currently investigating the efficacy of a number of techniques ranging from OLS regressions to multiple logit models. These, too, will be reported on shortly.

4. Changes Between Census 1986 and Census 1991

Among the more prominent findings to emerge from the analysis of the 1986 and 1991 Censuses are:

(a) Overall Composition

At the time of the 1991 Census there were approximately 6,633,300 people in work in Australia. Less than twenty five percent of these were working in symbolic analyst occupations, the rest were more or less evenly divided between in-person service work and routine production work.

Whilst this total employment figure was some 276,500 higher than at the time of the 1986 Census the composition of employment had changed markedly. The number of routine production workers had actually fallen, symbolic analysts had grown on average at 4.6 per cent per annum and in-person service numbers too, had grown but only at 1.43 per cent per annum. As a consequence, routine production workers had declined from 41 per cent to under 36 per cent of those in work, and symbolic analysts had grown from 20.3 per cent to 24.4 per cent. In-person service workers also experienced a slight relative improvement in their employment position.

(b) Workforce Experience

(i) Employment Status

Symbolic analysts are more likely to be either self-employed or employers than are either of the other groups. Groups that are least likely to be either self-employed or employers are female in-person service and routine production workers. The growth, however, has been mostly amongst symbolic analysts (of both sexes) as employers, and amongst female symbolic analysts as wage and salary earners. Routine production work amongst wage and salary earners declined over the period.

(ii) Level of Workforce Participation

Symbolic analysts are much more likely to be working full time than are either of the other groups. Amongst female in-person service workers part time and casual work constitutes the major labour force experience. Between 1986 and 1991 the fastest growth was experienced by female symbolic analysts working both full-time and part-time. Casual work across all occupational categories grew, but full-time work for routine production workers fell.

(iii) Sector

There is a disproportionate number of symbolic analysts employed in the public sector, especially at the federal level. Female in-person service workers are over-represented at the state level of the public sector. Strongest growth, however, is in the private sector, so that its share of all occupational groups is increasing. Again, however, the greatest growth has been amongst symbolic analysts.

(iv) Industry

The greatest numbers of symbolic analysts are found in business services, retailing/wholesaling, manufacturing and agriculture. In-person service workers are mostly found in retailing/wholesaling, health services and in education, whilst routine production workers are congregated in manufacturing, retailing/wholesaling and business services. In terms of relative concentration within workforces, agriculture, defence, business services and public administration had the highest levels of symbolic analysts and health and personal services the lowest. Health services, education and tourism and hospitality had the greatest relative concentrations of in-person service workers, and manufacturing and mining the greatest concentrations of routine production workers.

Between 1986 and 1991 almost all industries saw a decline in employment of male routine production workers. The only exceptions were in health, tourism and hospitality and in personal services industries. Job losses for female routine production workers were not as widespread. As is to be expected, the strongest growth in in-person service work was in the service industries, although there were (albeit small absolute) increases in this type of employment in the mining sector.

Almost all industries expanded their employment of symbolic analysts, the exceptions being agriculture and, for males, mining and the utilities. The gains made by female symbolic analysts were widespread.

(v) Earnings

For both males and females average annual earnings of symbolic analysts were much greater than those of either of the other two groups. This was so irrespective of whether workers were full time, part time or casual. Male symbolic analysts clearly had the earnings edge on all other groups – including female symbolic analysts and male workers in other categories.

Growth patterns in earnings over the period conform more or less to expectations. Between 1986 and 1991 average annual earnings of both male and female symbolic analysts grew faster than earnings of workers in the other two occupational categories. However for males, earnings of the two other groups grew at virtually the same rate, whilst for females routine production workers' average earnings actually grew faster than those of in-person service workers. In all categories female average earnings grew faster than those of males.

(c) Personal Characteristics

(i) Gender

Seventy per cent of symbolic analysts in 1991 were male. This is a considerably higher proportion than in either of the other two groups – routine production workers (60 per cent) and in-person service workers (47 per cent). However, this is a considerably lower percentage in each category of occupations than existed in 1986. Female workers made strong gains across all occupational groups.

(ii) Age

Symbolic analysts tend to be older than workers in the other two groups. This applies to both males and females. Not only is their average age higher, but they have a considerably lower proportion of their number under the age of 30. There are no significant differences between workers in the other two groups. However the general tendency was for the male population in employment to age over the period and, except for those in routine production work, for the average age of the female employed population to fall.

(iii) Proficiency in English

Proficiency in English appears to have a substantial impact upon whether or not workers are employed as symbolic analysts. For females this also appears to effect their chances of being employed as in-person service workers. The majority of those with poor or no English proficiency work as routine production workers. Workers who had little or no proficiency in English declined significantly in relative importance in all occupational categories over the period.

(iv) LOTE Spoken in the Home

Language considerations in the distribution of workers between Reichian occupational categories are reinforced when differences according to whether a language other than English is spoken in the home are taken into account. However, there appeared to be little change in the patterns of LOTE spoken in the home between 1986 and 1987.

(v) School Leaving Age

Symbolic analysts typically left school at a later age than workers in the other two groups. There appeared to be a greater spread of school leaving ages amongst in-person service workers. In all occupational groups the proportion who left school at age 15 and below declined substantially between 1986 and 1991, whilst the proportion who stayed at school to age 17 or more grew commensurably.

(vi) Highest Educational Qualifications

Whilst about half of all male workers and 60 per cent of all female workers had no post-school qualifications in 1991, the pattern was markedly different amongst symbolic analysts. Amongst this group, those with post-school qualifications were in the majority, and there was a disproportionate number of workers with bachelor and higher degrees. Looking at the occupational destinies of those with given levels of post-school qualifications, males with higher degrees, associate diplomas and bachelor degrees were most likely to be employed as symbolic analysts. Females with undergraduate and postgraduate diplomas were most strongly represented in the in-person service occupations, whilst males with skilled vocational qualifications were most concentrated in routine production work.

Growth in employment of symbolic analysts between 1986 and 1991 was so strong for both males and females that workers with all levels of educational qualifications participated. The only exception was males whose highest qualification was an undergraduate diploma. In general, however, employment growth was greater the higher the educational qualifications held. Moreover, for males, that growth was strongest in employment as symbolic analysts in all cases except for those with higher degrees. For females this was only the case amongst lower level qualifications.

(vii) Field of Study

Workers with post-school qualifications in the fields of science, agriculture, transport, and the humanities were most likely to become symbolic analysts. Least likely were those whose field was hairdressing/beauty, food/hospitality and medicine/health. The strongest growth area, however, was in business and administration studies. Workers with qualifications in this field exhibited the strongest growth in employment between 1986 and 1991 – amongst males and females, and for symbolic analysts and in-person service workers.

(viii) Time Since Obtained Highest Qualification

The distribution of the period since workers' highest qualifications were acquired tends to mirror the differences in the age distributions of workers in the three categories. Similarly the ageing of the male population is reflected in the greater proportion of workers who acquired their highest qualifications ten years or more previously. The changes amongst females in employment, whilst similar in this respect, were not as marked.

(ix) Currently Studying

Only a small minority of each category of worker reported they were still studying. Of those that did, in-person service workers tended to favour full time study whilst symbolic analysts were more likely to be studying part time. The pattern remained substantially the same between 1986 and 1991.

(x) Where Currently Studying

By far the greatest proportion of symbolic analysts still studying in 1991 were doing so at university level, whilst the great bulk of routine production workers still studying were enrolled in TAFE courses. In-person service workers still studying were spread more evenly across educational institutions, with a sizeable proportion still studying at the school level.

(d) Location Variables[1]

(i) State/Territory

The distribution of workers by Reichian occupational categories did not differ to any marked extent by State/Territory.

(ii) Metropolitan/Non Metropolitan

Overall, symbolic analysts were not especially concentrated in metropolitan areas. The only substantial difference between occupational groups in this respect was the greater relative number of male routine production workers in non-metropolitan areas, and a lesser concentration of female routine production workers in those areas.

(iii) Sydney/Melbourne/Other Metropolitan

Sydney appeared to have the greatest relative concentration of symbolic analysts amongst its workers.

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[1] Note that changes in how this question was asked in the 1991 Census meant that comparisons with the 1986 Census are not possible. These comments, therefore, refer only to the 1991 Census results.

5. Future Directions

The important variables that emerge from the analysis in the previous section are all of those that cross classify occupations by workforce experience – workforce status, level of participation, sector, industry and earnings – as well as gender and level and type of educational qualifications. Further analysis will concentrate upon these.

The directions this analysis will take are:

- more detailed two and three way cross-tabulations using Census 1986 and Census 1991 data, plus a range of other statistical treatments;
- the bringing forward of as many variables as possible through the use of the *Labour Market Survey* and other ABS sources;
- the development of micro-studies concentrating on single firms, industries and occupations; and
- international comparisons, through collaboration with research bodies overseas, applying the Reichian analysis to similar bodies of data in a range of other countries.

6. Implications for VET

The full implications of these trends are yet to be teased out. The initial picture is somewhat, but not completely, gloomy. Figures 1 and 2 summarise the trends for males and females respectively. They show that over the period 1986 to 1991 workers with trade qualifications, undergraduate diplomas (especially for males, less so for females) and 'other' post-school qualifications typically competed poorly in all broad occupational categories. Encouragingly, however, they did manage to expand their employment amongst symbolic analysts.

Further statistical analysis of the relative performance of VET qualified workers, by workforce experience, will be the subject of the next report on this project. This report will also contain a discussion of the directions in which this type of analysis of trends in employment point VET policy makers, curriculum designers and practitioners.

References

BIE (Bureau of Industry Economics) 1993. *Multinationals and Governments: Issues and Implications for Australia*, Research Report 49, AGPS, Canberra.

BIE (Bureau of Industry Economics) 1995a. *Investment Abroad by Australian Companies: Issues and Implications*, Report 95/19, AGPS, Canberra.

BIE (Bureau of Industry Economics) 1995b. *Overview 1995: International Benchmarking*, Report 95/20, AGPS, Canberra.

EPAC (Economic Planning Advisory Commission) 1995. *Globalisation: Issues for Australia*, Commission Paper No. 5, AGPS, Canberra.

Fagan, R. and Webber, M. 1994. *Global Restructuring: The Australian Experience*, Meridian OUP.

Lloyd, P. 1995. "The Nature of Globalisation", in EPAC, *Globalisation: Issues for Australia*, Commission Paper No. 5, AGPS, Canberra.

Maglen, L. 1994. "Globalisation of the World Economy and its Impact upon Employment and Training in Australia", *Australian Bulletin of Labour*, 20(4), 298-319.

Maglen, L. 1995. *Globalisation and the Australian Workforce: Some Further Analysis*, Monash University-ACER Centre for the Economics of Education and Training, Monash University, Melbourne.

OECD (Organisation for Economic Co-operation and Development) 1991. *Structural Change and Industrial Performance*, OECD, Paris.

OECD (Organisation for Economic Co-operation and Development) 1992. *Technology and the Economy: The Key Relationships*, OECD, Paris.

Reich, R. 1991. *The Work of Nations: A Blueprint for the Future*, Simon and Schuster, London.

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Figure 1: Changes in Male Employment by Educational Level and by Occupational Category, Census 1986 to Census 1991

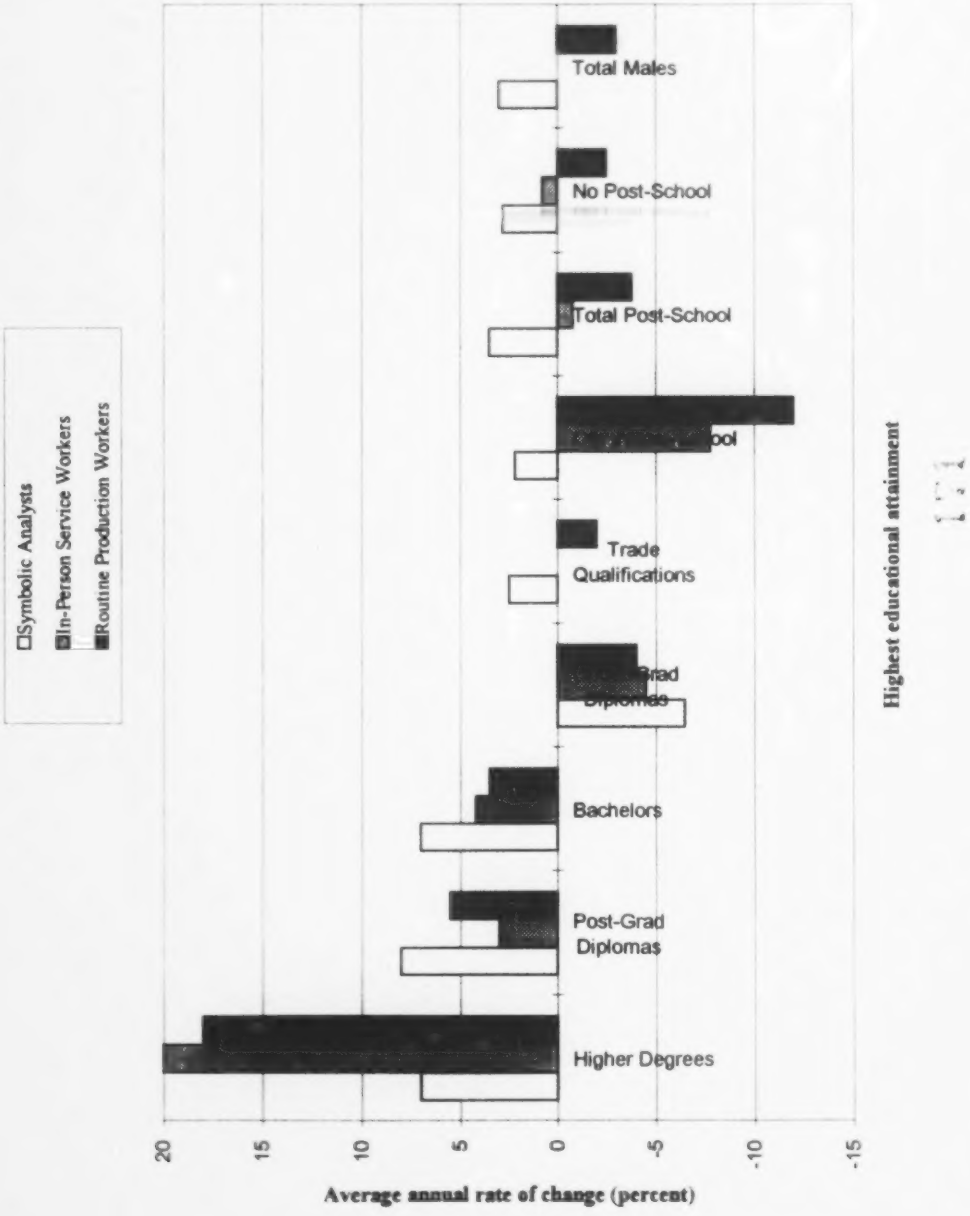
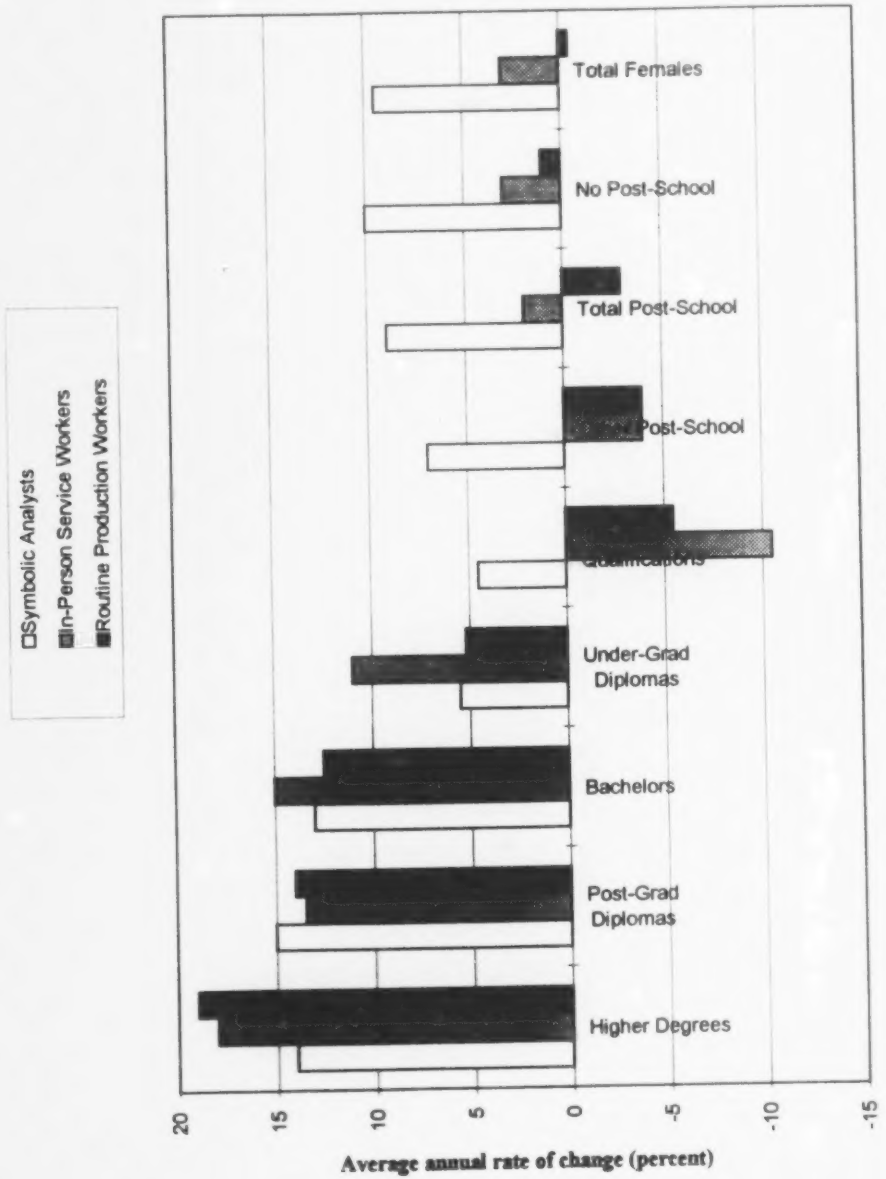


Figure 2: Changes in Female Employment by Educational Level and by Occupational Category, Census 1986 to Census 1991



Annex 1: Relevant Economic Indicators for the Period 1986 to 1991

Table 1.1: Distribution of Workers by Occupational Category: Census 1986 and Census 1991.

Table 1.2: Distribution of Workers by Employment Status, by Occupational Category: Census 1991.

Table 1.3: Changes in Distribution of Workers by Occupational Category and Employment Status Between Census 1986 and Census 1991.

Table 1.4: Distribution of Workers by Occupational Category and Type of Work: Census 1991.

Table 1.5: Changes in the Distribution of Workers by Occupational Category and by Hours Worked in Previous Week Between Census 1986 and Census 1991.

Table 1.6: Distribution of Workers by Employment Sector, by Occupational Category: Census 1991.

Table 1.7: Changes in the Distribution of Workers by Occupational Category and by Sector Between Census 1986 and Census 1991.

Table 1.8: Distribution of Workers by Occupational Category and by Industry: Census 1991.

Table 1.9: Change in the Distribution of Workers by Occupational Category and by Industry Between Census 1986 and Census 1991.

Table 1.10: Average Earnings of Workers by Type of Work and Occupational Category: Census 1991.

Table 1.11: Relative Earnings of Workers by Type of Work and Occupational Category: Census 1991.

Table 1.12: Changes in Average Annual Earnings of Workers by Occupational Category Between Census 1986 and Census 1991.

Table 1.13: Male/Female Composition of Employment, by Occupational Category: Census 1991.

Table 1.14: Male/Female Composition of Those in Employment by Occupational Category: Census 1986 and Census 1991.

Table 1.15: Age Distribution of Workers, by Occupational Category: Census 1986 and Census 1991.

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(A) Workforce Variables (All classified by Male, Female and Total)

(i) **Sector:** 1: Commonwealth Government, 2: State/Territory Government, 3: Local Government, 1-3: Public sector; 4: Private sector; 5-6: Ignore.

(ii) **Status:** 1: Wage and salary earner; 2: Self-employed; 3: Employer; 1-3: In employment; 4: Unpaid helper; 5: Unemployed-seeking full-time work; 6: Unemployed-seeking part-time work; 1-6: In workforce; 7-9: Ignore.

(iii) **Hours Worked:** 1: None (unemployed); 2: 1-15 (casual); 3: 16-24; 4: 25-34; 3-4: 16-34 (part-time); 5: 35-39; 6: 40; 7: 41-48; 8: 49 plus; 5-8: 35 plus (full-time); 9-10: Ignore.

(iv) **Industry:** 1-4: Primary industry; 5-10: Mining industry; 11-22: Manufacturing Industry; 23-24: Utilities; 25-26: Construction industry; 27-28: Trade; 29-35: Transport industry; 36: Communications; 37-39: Commercial services; 40: Public administration; 41: Defence; 42: Health; 43: Education/library services; 44-45: Community services; 46-47: Tourism and hospitality; 48: Personal services; 49: Ignore.

(v) **Earnings:** 1: Less than $3001; 2: $3001-$5000; 3: $5001-$8000; 4: $8001-$12000; 5: $12001-$16000; 6: $16001-$20000; 7: $20001-$25000; 8: $25001-$30000; 9: $30001-$35000; 10: $35001-$40000; 11: $40001-$50000; 12: $50001-$60000; 13: $60001-$70000; 14: more than $70000; 15-16: Ignore.

(B) Personal Characteristics (All classified by Male, Female and Total)

(i) **Gender:**

(ii) **Age:** 0-14: Ignore; 15-19: 15-19; 20-24: 20-24; 25: 25-29; 26: 30-34; 27: 35-39; 28: 40-44; 29: 45-49; 30: 50-54; 31: 54-59; 32: 60-64; 33-37: 65 and over.

(iii) **Proficiency in English:** 1: English only; 2: Very well/well; 1-2: Proficient; 3: Not well; 4: Not at all; 3-4: Not proficient; 5-6: Ignore.

(iv) **LOTE in the Home:** 1-19: Yes; 22: No; 20-21: Ignore.

(v) **Age Left School:** 1: Ignore; 2: No school; 3: 14 or less; 4: 15; 5: 16; 6: 17; 7: 18; 8: 19 and over; 9-10: Ignore.

(vi) **Highest Post-School Qualification:** 1: Higher degree; 2: Post-graduate diploma; 3: Bachelor degree; 4: Undergraduate diploma; 5: Associate diploma; 6: Skilled vocational; 7: Basic vocational; 10: No post-school qualifications; 8-9: Ignore.

(vii) **Highest Subject Area:** 1-5: Business studies; 6-12: Medicine and health; 13-16: Education; 17-26: Humanities and social sciences; 27-32: Natural sciences; 33-42: Engineering; 43-46: Architecture and building; 47-50: Agriculture and related fields; 52: Hairdressing and beauty therapy; 53: Food and hospitality services; 54: Transport; 51 and 56: Miscellaneous; 58: No post-school study; 55 and 57: Ignore.

(viii) **When Highest Qualification Obtained:** 1: 20 or more years before; 2-3: Between 10 and 20 years before; 4: Between 5 and 10 years before; 5: 4 or 5 years before; 6: 2 or 3 years before; 7: Within a year before; 9: No post school study; 8: Ignore.

(ix) **Currently Studying:** 1: No; 2: Yes full-time; 3: Yes part-time; 2-3: Yes; 4: Ignore.

(x) **Institution at Which Studying:** 1-5: School; 6: TAFE college; 7: University/CAE; 8: Other; 10: Not currently studying; 9: Ignore.

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(C) Location Variables (All classified by Male, Female and Total)

(i) **State/Territory:** 1-7: New South Wales; 8-12: Victoria; 13-16: Queensland; 17-19: South Australia, Western Australia, Northern Territory; 20: Tasmania and the A.C.T.

(ii) **Metropolitan/Non-Metropolitan:** 1-4: Sydney; 8-10: Melbourne; 13: Brisbane; 17: Adelaide; 18: Perth; the above: Metropolitan; the rest: Non-metropolitan.

(iii) **Sydney/Melbourne/Other Metropolitan:** 1-4: Sydney; 8-10: Melbourne; 13, 17-18: Other metropolitan; the rest: ignore

SKILLS FOR SMALL, HIGH TECH EXPORTERS: OVERCOMING THE "TRANSITION" PROBLEM

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Introduction

A 1995 Yellow Pages Small Business Survey of *Small Business Growth Aspirations and the Role of Exports* found that only 8 per cent of small business is experiencing high growth rates (averaging 10 per cent in the last year). However, these firms accounted for 27 per cent of the gross employment growth of established small businesses. These high-growth businesses are also significant exporters.

The McKinsey study of *Emerging Exporters* for the Australian Manufacturing Council in 1993 first highlighted the contribution made by some 700 small and medium sized enterprises to Australia's export performance. They have played a key role in the marked improvement since 1986/87 in Australia's export of "elaborately transformed manufactures". A further study by the LEK Partnership in 1995 entitled *Intelligent Exports and the Silent Revolution in Services* highlighted a 14 per cent growth in service exports between 1963 and 1993.

These studies have suggested that considerable potential exists for improving Australia's trade performance and standard of living if the constraints on these companies' capacity to export are addressed. This paper is a contribution to the debate on what are the appropriate ways for public policy to assist small and medium sized enterprises (SMEs) to lift their export performance.

The McKinsey Report gave particular emphasis to the constraints imposed by the lack of suitable employee and management skills. A particular problem the report identified was the need for the successful exporters to make the transition from being a small, privately run outfit to become "a medium-sized, professionally managed unit, incorporating all the systems and operational capabilities of modern enterprises" (McKinsey and Co 1993, p.52). The report went on to state that more Australian research was needed on the transition issue.

The purpose of this paper is to report on the problems faced by small, high tech enterprises in moving from an early establishment phase to consolidation for further growth. The evidence drawing on eight case studies suggests that many small, high tech exporters may have reached a plateau in their capacity to grow. In most cases, the enterprises studied have failed to make a successful transition from an ad hoc, craft mode of product development to an organisational structure that is capable of further expansion and growth.

One aspect of the failure to implement new systems is the general absence of sophisticated human resource policies. This is despite the widespread importance that these enterprises give to the role of research and development and their reliance on highly qualified knowledge workers.

On the other hand, there is some evidence that small, high tech enterprises are responding to the difficulties they face by participating in what can be termed "learning networks". These networks offer considerable potential for creating the level of cooperation small firms need to replicate the success of high tech startups in North America and Europe.

1. Case Studies Profile

Table 1 presents a profile of the enterprises chosen for study. Their key features are outlined below.

- all the enterprises were founded in the last 25 years, with half only existing since 1980;
- all enterprises studied have passed beyond the start-up phase, with its heavy reliance on the founding entrepreneur, to a stage where usually they are seeking to consolidate their early rapid growth;
- the size of the firms varies from four to 176 employees with most between fifty and 120 employees;
- the industries in which the enterprises are located vary from metal and plastics manufacturing, textiles to graphic design and publishing;
- the range of products varies from computer and graphic design services to machine tools, scientific instruments and early warning fire detection equipment, software programs, ultra fine wool garments and multimedia games;
- the focus of most exporters is on serving a small number of customers in niche markets. Only the multimedia and related products are produced for a mass market; and
- all except the smallest firm are involved in exporting with the proportion of sales varying from sixty to 98 per cent.

For all but one exporter, the case studies fit the McKinsey study definition of exporters that are born global. This means that firms have started exporting very early in their life and they export most of their sales. Most of the firms that are exporting did so within the first five years of start up.

The results reported here are from a larger study conducted for the Dusseldorp Skills Forum, Sydney. The purpose of that project was to use case study methodology to investigate and report on the skill formation methods used in small to medium sized, leading-edge manufacturing firms. These are enterprises that have captured significant export markets and small to medium sized firms that need to employ significant numbers of knowledge workers. A copy of the final report and the writeup of case study is available from the Forum.

The following sources were consulted to identify suitable enterprises to approach: McKinsey study of emerging exporters, Austrade, Victorian Department of Business and Employment; Federal Department of Industry, Science and Technology; Metal Trades Industry Association; and Roberts Reports, from the Australian Financial Review, 1989-1994.

After the enterprises agreed to participate, each was sent a questionnaire in advance. The questionnaire sought background information on the enterprise: major products; vision or mission statement; numbers employed; job categories; age profile; assessment of overall company performance; annual turnover in sales; and proportion of sales exported. Information was also sought on future expectations about sales over the next five years compared with sales growth over the past five years; number of years in existence at the time of first significant export; main source of competitive advantage in exporting; and what are the constraints faced by the firm in achieving export growth over the next five years.

The main form of data collection consisted of an interview for between one and a half and two hours with a senior management person. Titles of the persons interviewed were: one Chairman, five Managing Directors, two Corporate Affairs Managers, one International Marketing Manager and one Personnel Manager.

Table 1: Profile Of Enterprise Case Studies

Company and Year Started	Size	Industry	Products	% Exported	Born Global
Farley 1983	65	Machine tool design and manufacture	• CNC Profile Cotler • CNC Controllers • Applications software	70	Yes
Lochard 1990	54	Software development and equipment manufacture	• Airport noise and flight track monitoring equipment	95	Yes
GBC 1978	176	Design and manufacture of scientific instruments	• Spectrometers	90	Yes
Beam 1980	60	Multimedia software development	• Interactive multimedia games	95	Yes
IEI 1970	120	Fire protection apparatus: design and manufacture	• VESDA very early smoke detection apparatus	76	Yes
Moldflow 1978	120	Software for the Plastics Industry	• Software for plastics manufacture	98	Yes
Merino Gold 1989	15	Textiles and clothing	• Soft woollen knitwear • Woollen suiting fabric	2	Yes
ANA 1989	11	Computer software	• Reverse engineering • Client saver systems	?	Yes
Stuart Pettigrew Design	4	Graphic design	• Publication design • Visual identity design • Packaging design	No	No
Induction Heating Systems 1973	94	Metal manufacturing	• Induction heating system • Resistance welding machines	70	Yes
Travel Guide Publisher 1984	76	Book publishing	• Travel guides	85	Yes
Thermal Paper Products Manufacturer 1978	52	Printing Industry	• Thermal coated paper products	60	Yes

The characteristics of high tech companies compared with more traditional manufacturing enterprises are shown in Table 2 below. The case studies in the following analysis have, therefore, been grouped according to their level of technology and export performance.

Table 2: Features Distinguishing High Technology From Traditional Firms

Dimensions	High Technology	Traditional
Product	Cutting edge of technology	Well established
Industry	Electronics/computers/chemical	Manufacturing/services/misc
Rate of innovation	High	Low
R and D expenditures	High	Low
R and D employees	High proportion	Low percentage
R and D employee attrition	High	–
Firm size	Smaller	Larger
Mortality rate	Higher	Lower
Rate of growth	Higher	Lower
Profits	Higher but variable	Lower but stable
Geographic concentration	High	Low
Organisational life cycle	Start-up/growth	Mature/decline
Product life cycle	Three years	Eight years

Source Gomez-Mejia and Welbourne 1990: 256

A close look at the major activities and technologies of the firms studied suggests a grouping of enterprises into either high tech or medium level technology. The high tech enterprises are so defined because of their focus on sophisticated and complex value-added products. In seven cases, the high value-added activity is software development (Farley Cutting Systems, Lochard Environmental Systems, GBC Scientific Equipment, Beam Software, IEI, ANA Software and Moldflow). All these enterprises use leading-edge technology to place them at the forefront of their competitors in world markets. In six cases, these firms are serving niche markets with only a small number of significant competitors. Only Beam Software with its focus on interactive multi media products is aiming at a mass market. All these high tech firms are significant exporters except one (ANA Software). Medium level technology is the basis of production in three cases: Merino Gold, Travel Guide Publisher and Thermal Paper Products. The products of these firms can compete well on overseas markets but there are significant competitors.

Seven enterprises can be identified as high tech, significant exporters with an extensive reliance on tertiary qualified, knowledge workers. These are: Farley Cutting Systems, Lochard Environmental Systems, IEI Australia, GBC Scientific Equipment, Moldflow, Beam Software and Induction Heating Systems. Another group of three enterprises use medium level technology and knowledge workers to achieve significant export performance. These enterprises are: Thermal Paper Products, Travel Guide

Publisher and Merino Gold. A third group of two case studies illustrate the use of knowledge workers predominantly within the domestic market (ANA Software, Stuart Pettigrew Design).

Much of the following analysis concentrates on the six high tech exporters: Farley Cutting Systems, Lochard Environmental Systems, IEI, GBC Scientific Equipment, Moldflow and Beam Software. This is because they are small to medium sized, leading-edge manufacturing firms that have captured significant export markets. These enterprises also have a range of characteristics in common. They therefore, offer valuable insights into the problems and constraints faced by small, innovative companies experiencing rapid growth.

2. Analysis

The following section examines in greater detail four aspects of the nature of the enterprises studied. The first aspect describes the growth stages of new high tech start-ups and assesses to what extent firms have made a successful transition through the various phases identified.

2.1 Stages of Growth

The background information on each enterprise offers the opportunity to distinguish the different stages of development reached. An English study has identified six stages in the growth of small and medium-sized, high tech companies (Dodgson and Rothwell 1989). Different stages of a firm's evolution can help to illustrate how different sets of management and operational skills are required. The stages or phases do not represent a strict chronological path; they may run concurrently. Nevertheless, each stage is seen as marking a critical threshold in the development of a company. The transitional stages identified by the study are:

- Start up
- Technological and scientific consolidation
- Internationalisation of markets
- Professionalisation of management
- Vertical integration
- Product and business diversification (Dodgson and Rothwell 1989, p.150).

Stage One: Start-up

A common pattern for the start-up stage, discernible from the case studies, is for an individual or small group of people to take up the challenge of developing and making a product based on new technology. This start-up stage also requires entrepreneurial skills to attract capital investment to underwrite the initial period of product development until a position in the market is established. In four cases (Farley Cutting Systems, IEI, GBC Scientific Equipment and Moldflow), an engineer (or engineers in GBC's case) invented, developed or saw the potential of a particular process (plasma cutting system, smoke detection apparatus, atomic absorption spectrophotometer and computer-aided engineering) and took on the role of entrepreneur to turn the new process into a commercial product.

The other companies (Beam Software, ANA Software, Travel Guide Publisher) started with a concept or service and turned it into a product that could be marketed widely (interactive computer games, software to update mainframe computer systems, and travel guides). In two cases, not classified as high tech (Induction Heating Systems and Thermal Paper Products), the technology was already established and technology transfer and/or internal development has been used to expand the product range.

Stage Two: Technological/Scientific Consolidation

Having established a company, a crucial early but continuing role for the founder(s) is to consolidate its technological/scientific capability as the base on which all other activity depends. To develop leading-edge technology, the new enterprise has to bring together people with the requisite expertise and to work together to master levels of knowledge often nonexistent elsewhere (Dodgson and Rothwell 1989).

Working, marketable prototypes need to be developed from untested concepts or prototypes produced under laboratory conditions with little regard to cost. This requires considerable scientific and technological expertise that soon outstretches the resources of the company's founder or founders and the small group of knowledge workers he has been able to gather. An early priority for the start-up high tech company is to ensure that the requisite skills are available in-house or can be obtained and assimilated from external sources (Dodgson and Rothwell 1989, p.150).

The initial impetus for the high tech company comes from R & D and this focus continues to have a strong influence on what sorts of personnel are recruited to the fledgling organisation. A characteristic of most of the high tech start-up case studies is their rapid employee growth (Farley, Lochard, GBC, Beam, IEI and Moldflow). This creates a heavy reliance on the external labour market to find the skills that are needed because there is insufficient time available to cultivate internally the expertise required.

Lochard Environmental Systems has experienced the most rapid growth from start-up in 1990. Employee numbers increased from ten in June 1992 to 54 in early 1995. Farley Cutting Systems has grown from three to 65 people over a 12 year period. GBC Scientific Equipment has grown from only nine people in 1983 to 165 in 1995. Beam has grown from 35 employees in 1989 to 70 in 1993 but in early 1995 had settled at 60 employees. Travel Guide Publisher had grown from 40 staff in 1989 to 60 staff in 1993. Periods of rapid staff growth do not necessarily take place immediately after start-up. They may be a consequence of the development of a new technology/product line or expansion into overseas markets (e.g. Beam Software).

For most high tech firms, however, the immediate need to recruit appropriate expertise is the first major human resource issue faced. Other data on high tech firms in the United States suggest that recruitment of the best available talent in the early stages of a company's life cycle is critical (Kochan and Chalykoff 1987). Small start-up, high tech firms need to recruit aggressively on the external labour market for technical expertise. The ability to get a new product to market quickly becomes a critical survival issue. The costs of employing the appropriate expertise are given a low priority. Because timing is crucial, new firms recruit externally rather than develop the needed expertise internally by investing in training to upgrade the skills of existing employees (Kochan and Chalykoff 1987, p.192). This strategy, however, has consequences for enterprises at a later stage of their development.

Stage Three: Export Success

Most of the firms studied were selected from a population of small to medium-sized firms that are significant exporters. Nevertheless, it is important to note that these firms are not only exporting at least two-thirds of their product (commonly it is more than 90 percent), but that typically this was their orientation from their beginning. The limited nature of the Australian market and their "niche market" orientation means that high tech companies from the beginning need to export overseas. As noted above, these companies have been characterised by the McKinsey Report on emerging exporters as "born global".

The demands of marketing overseas have involved greatly increased costs for the new companies. Overseas marketing often requires establishing offices staffed by company employees (Farley, Lochard, GBC, IEI, Moldflow, Induction Heating Systems and Travel Guide Publisher). The ability to recruit suitable marketing managers can be a major constraint on company growth (Dodgson and Rothwell 1989, p.151).

Stage Four: The Professionalisation of Management

The major transition for a small to medium sized company requires the implementation of middle level systems to ensure stability. This is most often expressed as a change in management from the owner/founder to control by a professional manager as chief executive. In other instances, it takes the form of setting up new management systems under the continuing control of the founder(s).

The founders of high tech start-ups obviously possess significant scientific and technical skills often combined with entrepreneurial ambition and flair. However, these attributes do not necessarily make them always the best equipped to handle the formal aspects of management. These aspects include creating appropriate financial control and reporting systems, personnel management and creating effective organisational structures by more delegation of responsibility (Dodgson and Rothwell 1989, p.151). This transition from founder to professional CEO was evident in the cases of Beam Software, IEI, Moldflow and Merino Gold. In other cases, new systems were being implemented under the direction of the company founder or founders (Farley Cutting Systems, GBC Scientific Equipment, Lochard Environmental Systems).

Moldflow's case is a good example of this phase. The new chief executive with professional qualifications in management was appointed some nine years after the company was founded. More recently the founder has sold out to a private investment syndicate that includes the CEO and two other senior executives. With these changes has gone the formation of seven strategic business units that operate independently with their own clearly defined objectives and strategies.

From a skill formation strategy perspective, it is this transition that is crucial to developing a medium-term perspective on how to meet future skill needs. The focus in the early start-up phase is to build up a pool of internal resources despite costs. This necessary strategy, however, can result in significant cost overheads as the firm grows. Frequently, a continuing heavy reliance by the now established enterprise on the external labour market is no longer appropriate or beneficial. Difficulty in making this transition to internal systems of skills formation was facing many high tech exporters, e.g. Farley, Lochard, GBC, Beam and Moldflow. In all these cases, the transition to a more systematic, planned approach to human resources development has been nonexistent or, at best, only partial.

Stage Five: Vertical Integration

This stage can take the form of either taking on a manufacturing function or incorporating other companies' proprietary products to form systems. In the former case, high tech start ups such as Farley, Lochard, GBC and IEI have extended their product design and development work to include the manufacturing function. In the latter case, Moldflow and Beam Software in particular have both incorporated other proprietary products or processes to offer more comprehensive systems.

Stage Six: Product and Business Diversification

All the firms studied had or were seeking to diversify their product range. For Beam, this involved going beyond producing interactive multi media games to the development of "infotainment" products for Japanese schools. Farley has developed six products with further customisation of each product to the particular needs of a customer. GBC Scientific Equipment has extended its product range through the in-house development of spectrophotometers and the acquisition of another company that produced emission spectrometers. IEI has extended its product range to include programmable, micro processor - based early warning smoke detectors. Similarly, Lochard is developing a more advanced monitoring system as well as offering extensive customisation to meet the requirements of each user. Moldflow has diversified its operations to include material testing, research for customers, the development of technology to set-up, monitor and control injection moulding machines and consulting work. Thermal Paper Products is moving to sell its patented technology as a "product range"

2.2 Emergence of Learning Networks

Ready access to a pool of technical expertise is said to be a key feature of the relative success of small, high tech start-ups in California's Silicon Valley compared with the closed internal labour markets of the large computer firms on Boston's Route 128 (Saxenian 1994, p 37). The localised accumulation of technical knowledge enhanced the viability of Silicon Valley start-ups and helped to reinforce a shared technical culture. Close working relationships were developed between public education providers such as community colleges and universities to supply needed skills and research capacity (Useem 1986, Saxenian 1994, p 66). The result for firms in Silicon Valley has been "shifting patterns of competition and collaboration" to enable specialised producers "to learn collectively and to adjust to one another's needs" (Saxenian 1994, p 161)

The case studies showed evidence of the early emergence of similar networks. This has taken the form of a Cooperative Research Centre in Intelligent Manufacturing Systems and Technologies for two high tech firms (Farley Cutting Systems and Moldflow). There are also other joint projects with the CSIRO and bilateral projects with universities, often involving the exchange of academic staff (Farley Cutting Systems, GBC Scientific Equipment, IEI Australia and Beam Software). Six Cooperative Multimedia Centres are to be established by the Federal Government by June 1995 to provide a similar research and development capacity for that industry.

In other cases, the evidence of the importance of learning networks includes the formation of strategic alliances with larger enterprises or overseas research bodies. Lochard Environmental Systems has close links with Siemens Nixdorf (Germany) and Thomson-CSF (France) as well as working closely with the Dutch National Aeronautical Laboratory. Lochard management expressed the view that joint ventures and consortia are essential to the survival of small firms like Lochard in the future. This is due to the large size of the market which means that the extent of the intelligence required is beyond the resources of small enterprises.

This growing recognition of the value of collaborative ties is in contrast to the situation some three to four years previously. The McKinsey survey of emerging exporters showed that only one in ten emerging exporters had research connections to an outside research institution such as the CSIRO or a university (McKinsey and Co 1993, p 54)

3. Conclusion

The above findings and analysis suggest that many small to medium-sized exporters may have hit a barrier to their growth. These firms are heavily reliant on knowledge workers, but the absence of due attention to the issues of internal skills development is likely to stunt many small exporters. The lack of human resource systems is stopping many of these enterprises from making the transition to larger enterprises. Unless this transition is achieved, they will not be able to consolidate their position by continuing to innovate and expand their operations on a world-wide scale. What is required is an investment in human resources beyond the immediate performance requirements of the organisation (Henry, Jones, Arthur and Pettigrew 1991, p.72).

The new Investors in People standard, based on a successful program in the UK, provides a benchmark against which SMEs can assess the adequacy of their human resource strategies. The emergence of learning networks should also help small, high tech firms in Australia to overcome some of the limitations of their size and relative isolation.

References

Dodgson, M. and Rothwell, R. 1989. "Technology Strategies in Small and Medium Sized Firms", in M. Dodgson (ed.), *Technology Strategy and the Firm: Management and Public Policy*, Longman, UK.

Gomez-Mejia L. and Welbourne, T. 1990. "The Role of Compensation in the Human Resource Strategies of High Technology Firms" in M. Yon Ginow and S. Albers Mohrman (eds.), *Managing Complexity in High technology Organisation*, Oxford University Press, New York.

Henry, C., Jones, A., Arthur, M. and Pettigrew, C. 1991. *Human Resource Development in Small to Medium Sized Enterprises*, UK Department of Employment Research, Paper No 88, London.

Kochan, T. and Chalykoff, J. 1987. "Human Resource Management and Business Life Cycles: Some Preliminary Propositions", in A. Clan Garner and C. Anderson (eds.), *Human Resource Management in High Technology Firms*, Lexington Books, Massachusetts.

McKinsey and Co. 1993. *Emerging Exporters: Australia's High Value-added Manufacturing Exporters*, Australian Manufacturing Council, Melbourne.

Roberts, P. 1994. "Multinationals Learn to Make the Most of Their Local Skills", *Australian Financial Review*, February 9.

Saxenian, A. 1994. *Regional Disadvantage: Culture and Competition in Silicon Valley and Route 128*, Harvard University Press, Cambridge, Massachusetts.

Useem, E. 1986. *Low Tech Education in a High Tech World*, Basic Books, New York.

FIRM-BASED TRAINING IN THE UNITED STATES: IMPLICATIONS FOR THE EDUCATION AND TRAINING "SYSTEM"

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Economic decline is a great motivator. During the past two decades, the various economic problems of the United States – declining competitiveness, a deteriorating balance of payments, a fall in the growth rate of productivity, falling real wages per worker, a growing disparity in the distribution of earnings, higher rates of unemployment and poverty – have stimulated a large and sprawling debate about the causes and therefore the potential cures. While the causes are no doubt multiple, some of them – for example, reduced rates of saving, a consumption mentality run amuck, or the short time horizons of business managers – may be beyond public manipulation. But others seem amenable to intervention, and therefore have attracted more than their share of attention. Among them are the provision of education and training for employment.

In one corner, a discussion has taken place about the amount and type of training that firms provide their workers. As I review in Section 1 of this paper, the general consensus is that American firms provide too little training – at least, relatively little compared to their major competitors – for reasons that are partly inherent in the nature of training, but are partly rooted in the characteristics of American institutions, and might therefore be changed. While there are not yet any clear solutions on the horizon, at least the dimensions of the problems have become relatively clear.

In another corner, there have been discussions about using firm-based training to reinvigorate the schooling system. The school-to-work "movement", discussed in Section 2, is the latest in a series of proposals in the United States to combine school-based and work-based learning, and to link the two so that they will be consistent with one another. While it is much too early to see what direction this movement will take, it faces a series of issues – including the issue of how to attract enough employers – that are similar to those of increasing the amount of firm-based training generally. And in still other corners there have been extensive debates about how to reform the schooling system in the United States so that it will provide the skills necessary for a newly-competitive economy dominated by high-skills firms – debates that have led to various school reforms and to different forms of what I call the "new vocationalism", replacing an older form of job-specific vocational education [1]

Although these discussions have to some extent taken place in different arenas, they are essentially part of the same debate: how best should future workers be prepared? Should they be prepared in educational institutions, relatively independent of firms? Should they instead be prepared within firms, in relatively formal firm-based training like apprenticeship methods – or in the much more informal preparation of on-the-job training? Should there be a combination of school-based and work-based learning? If so, how should the two components be linked? Or can work be arranged so that relatively little education and training is necessary, at least for the majority of jobs? The latter possibility – an economy with low levels of formal schooling for many individuals, with relatively little firm-based training to compensate – is a recipe for a low-productivity workforce, but it has dawned on many analysts that this may be essentially what the United States now has.

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[1] These reforms in the schooling and job training system are the subject of a companion paper prepared for the Conference on the Economic Impact of Vocational Education and Training, "Learning to Earn all over again: Current Issues in Vocational Education and Job Training in the United States", and will not be described in any detail in this paper.

The trick, of course, is both to determine what an improved education and training "system" might look like, *and* to move toward that kind of system. By examining other countries' education and training systems, it is possible to see what the important elements of such a system might be, and which elements are the subject of reforms that are being discussed in different arenas. But the American economic and political systems, with their preferences for limited intervention, lax regulation, and market-based solutions, make intervention and coordinated policy difficult, and so some potential reforms and possible borrowings from other countries – especially from Germany, with its much-discussed apprenticeship system – are difficult to imagine being implemented in the United States. An open question is whether economic decline is motivator enough to cause the U.S. to adopt new approaches, or whether the *laissez faire* ideologies of the nineteenth century and the educational institutions of the twentieth century will doom us in the twenty-first.

1. The Nature of Firm-Based Training[2]

There is an emerging consensus in the United States that American firms provide too little training to their workers, at least in comparison with our major competitors in Europe and Japan (Lynch 1994; U.S. G.A.O. 1990). Some of the relevant evidence is presented in Table 1: while there have evidently been recent increases in firm-based training in the U.S., the levels remain considerably lower than those in most advanced countries except those, like Canada and the United Kingdom, that share common approaches to education and training with the United States.[3] The contention that these levels are too low rests on the assumption that they have been partly responsible for low productivity growth since the early 1970s, though the evidence is weak and largely anecdotal.

In addition, it is clear that the United States provides relatively low levels of vocational education as Table 2 illustrates. (Indeed, the 30 percent figure in this table is surely an overstatement because most vocational education still takes place in high schools, where most students receive at best a smattering of unrelated courses rather than a coherent program of vocational specialization.) However, it is definitely not the case that the United States lags behind other countries in providing education in general, since the proportion with post-secondary education and with four-year college education is the highest of any country. Evidently, then, work-oriented education and firm-based job training are relatively scarce in the United States, while the kind of education leading to baccalaureate degrees – what one might consider academic instruction[4] – is much more common, a reflection of both the higher

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2 A note on terminology. In the German-speaking countries it is common to refer to "apprenticeship", but this term in the United States usually refers to union-sponsored on-the-job training, sometimes with a small schooling component attached to it, but often consisting less of training than low-wage routine work. This kind of apprenticeship has been used as much to control access to union positions as to provide a source of training. In some cases the term "training" is used synonymously with "firm-based training", but in the American context "training" often refers to the publicly-subsidized, short-term programs of various services provided to unemployed individuals, displaced workers, welfare recipients, high school dropouts, and others with special barriers to employment. I use the term "firm-based training" to refer to on-the-job training that firms provide their own employees.

3 The low figure for Germany seems anomalous because of that country's vaunted dual system; the explanation may be that students in that system are counted as being in vocational education – with high proportions in Table 2 – rather than being given firm-based training; see Lynch (1994), "Introduction", p. 10.

4 It is probably misleading to call most instruction leading to the baccalaureate "academic", since in the dominant four-year institutions – the public non-research universities that dominate enrollments, though not status rankings – the majority of students are in occupational majors like business, engineering, education, and the like. It is possible that when these are added to the

Table 1: Firm-Based Training in Advanced Countries

Country	Year	Percent of Employees Receiving Formal Training
United States	1983 1991	11.8 16.8
Canada	1985	6.7
West Germany	1989	12.7
Great Britain	1989	14.4
France	1990	32.0
Netherlands	1986	25.0
Sweden	1987	25.4
Japan	1989	36.7
Australia	1989	34.9
Norway	1989	33.1

Source: Lynch (1994), Introduction

Table 2: The Education and Training of Young Workers

Country	Percentage in Vocational Education	Percentage with any Post-secondary Schooling	Percentage in University or Four-Year College
United States	30	57	36
West Germany	70	30	26
England	18	21	8
France	–	50	27
Sweden	50	37	26
Japan	28	30	24
Australia	15	23	18

Source: Lynch (1994), Introduction.

earnings associated with baccalaureate degrees and with the higher status of such "academic" programs.

In general, firms provide formal training to individuals who have more formal schooling, as the figures in Table 3 reveal; both formal and informal firm-based training are more common for workers with some college or a baccalaureate degree than they are for others with lower levels of schooling. While this pattern may reflect a complementarity between education and firm-based training, it may also simply reflect a widespread institutional practice where a great deal of firm-based training is provided to managers (rather than front-line workers) to keep them up to date on changing practices. This practice has been generally confirmed (e.g. Lynch 1994, Introduction); while informal on-the-job training is ubiquitous, formal firm-based training is more common for males compared to females, for white workers compared to minority workers, and to those with more experience within the firm. Evidently, this describes a process where a firm selects certain of their "best" workers for promotion or retention (where selection may have gender and racial biases embedded in it) and provides formal training only to them.

However, what is more revealing from the results in Table 3 is how little education and training of any sort is necessary. Only 15 percent of high school graduates claim that their job requires formal schooling, while 31.2 percent say that they need some kind of firm-based training – largely informal on-the-job training, not formal training. Even among those with "some college" – a heterogeneous group that includes individuals with associate degrees and certificates, drop-outs from four-year colleges that have almost attained a baccalaureate degree, and drop-outs from community colleges who have little more than a course or two – only a third (35.7 percent) claim to need formal schooling, while a slightly smaller fraction (27.4 percent) needs some kind of firm-based training – again, largely informal rather than formal. Evidently, whatever hiring practices are, most jobs – at least, most jobs held by individuals without baccalaureate degrees – do not demand extensive education or training.

The sense that the levels of firm-based training reflected in Tables 1 and 3 are too low rests in part on the assumption that firm-based training plays a direct and unique role in the productivity of *firms*. While this contention is difficult to document, Bartel (1992) used a survey of manufacturing firms in 1983 and 1986, and found that training increased firm productivity by some 17 percent. Using a variety of evidence, Bishop (1994) concluded that formal on-the-job training increases a worker's productivity by about 9.5 percent on the current job, as well as lowering the amount of training necessary; company-sponsored off-the-job training – for example, paying for individuals to get additional schooling in community colleges and four-year colleges – increased productivity by 16 percent and made workers more innovative. However, formal on-the-job training by a previous employer failed to increase wages on the current job – a sign that such training may be firm-specific, or that the lack of credentials certifying the value of training makes employers unwilling to reward it – and informal on-the-job training has little effect on productivity (Weiss 1994). Evidently, therefore, it matters a great deal whether firm-based training is current or not, and the form of such training also matters a great deal.

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figures in Table 2, "vocational" enrollments in the United States would look relatively large. To my knowledge, however, the vocational role of four-year colleges and universities has not been examined except by Cheit (1975).

Table 3: Education and Training Required for Employment, 1991

	Percent of the Labour Force	Percent Needing:			Percent Needing:*								
		No Training	Formal Schooling	Other Training Only	High School Vocational Training	Post-high School Vocational Training	Community College/ Technical Institute	4-Yr College	Formal Company Training	Informal On-the-job Training	Armed Forces Training	Correspondence Course	Friends, Relatives, Others
All workers, 16 and older	100.0	43.3	32.1	24.6	3.9	2.7	7.7	18.8	12.1	27.2	2.1	1.1	7.4
High school dropouts	13.5	72.2	4.1	23.7	1.6	1.1	1.1	0.2	4.6	18.1	0.4	0.4	5.9
High school graduates	39.5	53.8	15.0	31.2	6.0	3.2	5.3	1.1	11.6	26.4	2.1	1.0	7.2
Some college	22.1	36.9	35.7	27.4	4.5	4.1	19.5	10.8	15.9	32.1	3.1	1.5	8.0
College graduates	24.7	16.2	71.7	12.1	1.2	1.5	4.6	64.7	13.7	29.0	2.1	1.2	7.9

* Proportions may not sum to 100 percent because of multiple sources of training.

Source: Eck (1993), Table 6.

Because information directly related to productivity is so scarce, the case for firm-based training rests largely on evidence about its benefits to individuals; as long as firms pay their workers on the basis of productivity, increases in earnings reflect changes in productivity anyway.[5] Here the evidence is relatively good: for example, Lynch (1992) determined that all types of firm-based training lead to higher wage rates, and that had a larger effect than experience on the job. My own results using yet another data set reveal that individuals with formal company training have earnings that are 6.5 percent higher among men and 19.8 percent higher among women, though these results average across a crucial distinction: men with firm-based training related to their current job have earnings that are 9.2 percent higher, while those with unrelated training have earnings that are equivalent to those without training; similarly, women with related firm-based training have earnings that are 22.7 percent higher (Grubb, 1995). Company training does increase earnings, then; but its value is lost if an individual shifts to an unrelated job, or if the individual leaves for another company.

If firm-based training is valuable in enhancing productivity and earnings, and if by some measure there is too little of it provided in the United States, what might explain this sorry fact? The explanations generally fall into four categories.

Market Failure: The dominant explanation relies on Becker's (1975) distinction between firm-specific training versus general education. While firms have every incentive to provide perfectly firm-specific training, since only they can reap the benefits, they will provide general education (or training with some general components) only if workers or government bear the costs, since otherwise they will lose the benefits of general education as workers leave for other firms. (See also Stern and Ritzen 1991). This explanation in turn implies that firms with low turnover – for example, large firms with substantial opportunities for career progression, or those willing to pay efficiency wages – will be the only ones willing to support some degree of general training – and this is roughly consistent with the observation that training tends to take place in the largest firms with high wages.

There are several aspects of sub-baccalaureate labor markets in the United States that exacerbate this kind of market failure (Grubb et al, 1992; Grubb, 1996, Ch. 1). In general, turnover is relatively high for several reasons. There is more cyclical variation than in the market for those with baccalaureate degrees, in part because employers tend to substitute baccalaureate workers with both general and specific skills for sub-baccalaureate employees during recessions. Initial employment among individuals with less than a baccalaureate degree tends to come in smaller firms, which are also those most likely to go out of business; and upward mobility then requires moving *among* firms rather than *within* firms. Finally, there appears to be substantial growth in temporary or contingent employment – where firms hire substantial portions of their labor force from "temporary" employment agencies, and can then hire and fire at will as business expands and contracts; firms provide no training at all to such temporary workers except introduction to the specific tasks required, since their turnover is expected and generally imminent.[6] The sub-baccalaureate in the United States is in many ways the antithesis of the labor market in large export-oriented firms in Japan, where lifetime employment eliminates turnover and provides firms with the incentives to provide general training whose benefits they can then capture.

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5 This is the standard assumption of neo-classical economics, of course, and competitive markets should assure this result, but one of the explanations for under-provision of training ("institutional failure") is that many firms, especially small firms, may lack the information and experience necessary to convince them to increase training.

6 However, there are some indications that a few of the temporary help agencies themselves provide some training; see Seavey and Kazis (1994).

Information Failure: A second kind of failure is the inability of some firms to recognize the value of training. We might term this information failure to distinguish it from market failure, because the specific institutions involved lack the information necessary to behave as rational institutions. While this kind of information failure should not happen in perfect competition, in fact the value of education and training is a slippery concept under the best of conditions. After all, the effects of short-term job training programs continue to be hotly debated even after several decades of sophisticated random-assignment experiments; the value of sub-baccalaureate education at the national level has been carefully examined only in the last five years, and is only now being investigated with adequate data at the local level; very few of the large firms that offer substantial amounts of training appear to evaluate their own efforts; and the general concern with the amount of firm-based training is based more on an assumption than a demonstration that it is responsible for some of our economic decline. Even for large firms, then, the value of training is more an article of faith than demonstrated fact; smaller firms with fewer resources, greater concerns for the short term, and less connection to national debates about education and training are even less likely to be aware of what training might accomplish. (An analogous discussion has taken place in the arena of technology use, where small firms are often unaware of the productivity gains associated with the use of computers and computer-aided technologies). In this case, even if it were possible to eliminate the market failures and the possibilities of "poaching" trained workers – by having industry-wide funding of training, for example – small firms would not invest in training without additional information or pressure.

"System" Issues: As a number of authors have stressed in the context of Germany and Japan (e.g. Soskice 1994, Oulton and Steedman 1994), a high-training approach is not just a decision by firms themselves. In Germany, for example, the apprenticeship system is maintained in part by a funding arrangement, where the costs of apprenticeships are shared by the apprentices themselves in the form of lower wages, by the government in the form of subsidies, and by firms; strong unions and employer associations maintain this funding arrangement and police any potential efforts to violate the agreements that support apprenticeship; a wage structure provides substantial economic incentives for students to enter apprenticeships; and in turn selection of only strong students for apprenticeships provides incentives for students to learn while in school. But these elements are missing in the United States. Public funding for firm-based training is scarce, and the fledgling school-to-work program described below will not begin to provide substantial funds; since firms provide little funding, students are required to fund general training on their own (and student grants and loans, which fund more academic instruction and some post-secondary vocational education, are inapplicable to firm-based training); weak unions and weak employer associations are unable to police employment and training practices, and typically cannot even come to agreements over training that might be in the interests of an industry. The wage structure still rewards more academic schooling and completion of a baccalaureate, and at the sub-baccalaureate level the quality of school-work seems to make no difference in hiring, so that the only external incentives to work hard in school are educational incentives involved in being able to advance to the next level of education, not employment incentives. Similarly, the Japanese level of training depends on a strong export sector coordinated by a central government agency, the practices of permanent employment in these firms, an industrial relations systems and the economic stability that allow permanent employment, a high-performing schooling system with the active support of parents, and the economic incentives to perform well in school embedded in the wage structure of permanent employment. The changes in other institutions that would be necessary to emulate the German system or the Japanese system, with their interdependent institutions, are substantial and almost unthinkable in the United States. Without support from other institutions very few firms can by themselves shift to a high-training form of operation – though a very few firms manage to do so (like Motorola, Honeywell, the NUMMI plant co-owned by Toyota and General Motors), and they are mentioned so repeatedly that there appear to be very few examples.

The Low-Training Equilibrium: As a number of authors have demonstrated more formally, several different equilibria of education and firm-based training may exist in a country, and getting from one equilibrium to another may be difficult. The high-education, high-training equilibrium of Germany is one such equilibrium; the low-education, low-training equilibrium of the United States and Great Britain is another; and the outcome in Japan, where a sophisticated educational system makes possible informal learning on the job (rather than large amounts of formal firm-based training) is a third. In the United States, the coexistence within particular industries of large, highly-profitable firms with career mobility and internal training and peripheral firms with low wages, productivity, and training suggests that multiple equilibria can coexist. One characteristic of these equilibria is that it is difficult for a country to get from one to another, essentially for "systems" reasons: a different equilibrium would require coordinated changes in many public and private institutions.

The other problem is that equilibria characterized by high quality of education or training, or high levels of either one, may be unstable, and therefore tend to degrade to low-quality equilibria *unless* there is a concerted effort to maintain a high-quality equilibrium by a variety of institutions. In the United States, a "life cycle" has been proposed for firms, in which they move from innovative and highly-productive firms in emerging industries with high levels of research and development and a highly-educated workforce to (in most but not all cases) more routine production in mature industries with lower levels of R&D and training; while this life cycle has been depicted as a natural progression, it also illustrates the effort and innovation necessary to maintain a high-quality equilibrium. In innovative co-operative education programs combining school-based and work-based learning, a high-quality equilibrium emerges in which educational institutions send their best-prepared students and firms offer the most interesting work placements – and if either side begins to cheat on its side of this bargain, then increasingly poorly-prepared students find themselves in jobs of falling quality until a low-quality equilibrium is reached. A low-quality equilibrium has characterized other work-experience programs developed for high schools, many co-op programs, the short-term job training programs for the unemployed and welfare recipients, and the federal Job Service.[7] The tendency to develop public programs only for the least prepared individuals – those with the least education, the least labor market experience, the greatest barriers to employment – is a structural feature of American politics contributing to the emergence of low-quality equilibria.

There are, of course, other equilibria that exist in other countries, and others that have been proposed in the United States. One would rely on advanced, publicly-funded vocational education to provide both general and specific vocational skills, with relatively little firm-based training; this is a model in which the costs of firm-based training are effectively socialized, and some version of it is proposed when firms pressure local vocational programs and economic development programs[8] to provide them with both general and specific training. Still another equilibrium might be a low-education, high-firm-based training situation in which the low quality of the formal school system is compensated by having firm-based training provide both general education and specific job-related training; as I mention in Section 2 below, the early proponents of school-to-work programs seemed to think of apprenticeships as substitutes for a weak schooling system, rather than a way of shoring up schooling. But both of these

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7 In theory the Job Service provides an all-purpose job matching service; however, in practice it is an institution of last resort for individuals unable to find jobs in any other way and for peripheral firms unable to hire individuals given their low wages and poor working conditions.

8 Virtually every state has an "economic development" program that subsidizes training for particular firms, sometimes provided on the job and sometimes off the job by community colleges or specialized training providers. While the rationale for such firm-based training is generally "economic development", or enhancing local employment, in practice such programs are based more on crude politics than on well-developed principles of which training investments might enhance local economic conditions.

equilibria require political support for certain levels of government funding, political support for certain changes in the educational system, and an appropriate wage structure to provide the right incentives for students (and neither of them is likely to emerge).

There are, then, multiple and interlocking reasons for the low-training situation in the United States. So far the proposals to remedy this situation have been relatively few and far between.

- One is the proposal for an employer training tax, in which employers would be taxed in order to fund firm-based traini[illegible]nch 1994). This would eliminate the disincentive for particular firms to provide general traini[illegible]axing all the firms that would benefit. Given the antipathy to taxation in the United States, su[illegible] a tax is unlikely to pass in this or the next millennium.
- A second and more realistic effort is the enactment of public subsidies for firm-based training, through the economic development programs that states operate and the provision of firm-specific training by community colleges in contract education, often with a mixture of firm and public funding. Economic development programs have been enacted in virtually every state, for the purpose of enhancing employment and economic growth in the state, and using publicly-subsidized firm-specific training as a way of luring firms from other states (or keeping firms from leaving a state). But such efforts so far are tiny except in a few states; the specific activities they fund have been ill-considered and often politically motivated; and there is very little evidence that they achieve the goal of enhancing employment – though they remain popular with employers because they are forms of public subsidies.[9] And while contract education has been a highly visible and growing part of community colleges, this depends on the initiative of firms in wanting to provide training to their employers – and as long as the basic incentives to do so remain weak, marginal amounts of public support are unlikely to increase the amounts of firm-based training substantially and only a tiny fraction of firms are likely to benefit.
- A third avenue is the attempt to organize employers, especially small employers, in order to educate them about the value of training (and related technical changes, especially computer-related) and allow them to bargain more effectively with public education and training providers (Rogers and Streek 1992, see Grubb et al 1993 for a proposal for California). This would help get around both informational and market failures.
- A fourth possibility, potentially, is the movement for skill standards, based roughly on the certificates of mastery required in the German apprenticeship system. Industries would articulate skill standards for their workers that employees would presumably have to meet; this could be done either through firm-based training – where market failure would be minimized because all employers would meet these standards – or through public vocational education, since skill standards would exert pressure on educational institutions like community colleges to provide training to meet the standards. By providing a mechanism to increase the overall level of skills in the labor force, skill standards could stimulate either higher levels of vocational education or higher levels of firm-based training. But the movement for skill standards is too new, and faces too many problems – including the acceptance of any standards developed by the varied and local employers of sub-baccalaureate labor markets – to be sure of its success.
- The school-to-work "movement" described in Section 2 provides another model of enhancing firm-based training, though its future is highly uncertain.

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[9] There is now a substantial literature on these economic development efforts. For an attempt to create a more coherent rationale for such efforts in California, see Grubb et al (1993).

- The current efforts to reform K-12 schools in order to meet higher standards attempt to change the schooling portion of the schooling and training "system". But there is still little consensus about what school reform should do, there has been a tendency in the United States to cycle through endless reform movements, and the efforts to reform schools are often disconnected from their occupational purposes,[10] so that the success of school reform is very much in doubt.

There are, then, many fledgling efforts in the United States to enhance firm-based training, though each is small and uncertain. The difficulties they confront reflect the "systems" problem illustrated above: changes in an education and training system require the coordinated participation of many institutions, and this is especially difficult to achieve in a *laissez faire* society with independent institutions, a weak central government, antipathy toward regulation, and hostility toward taxation.

2. Combining School-based Learning and Work-based Training: The School-to-Work "Movement"

In addition to the general concern with the low level of firm-based training, a different and distinctly independent initiative has proposed enhancing the role of work-based learning in the preparation of new workers. As embodied in the School-to-Work Opportunities Act of 1994, the school-to-work (STW) movement has had bipartisan political support (at least at its inception), support from the employer community, seed money from the federal government, and interest from those educators and citizens not normally interested in occupationally-oriented programs. It builds on prior legislation in the area of vocational education, and is relatively consistent with other strands of education reform; the legislation intends to build a coherent education and training "system" rather than adding on a discrete and insignificant program to an overloaded schooling system. But while it is much too early to tell what is likely to happen, there are already signs of disintegration in the school-to-work vision.

The initial discussion of STW began with the observation that students in this country lack a smooth mechanism of transition from high school into employment, so that those who are not bound for college tend to mill around in a youth labor market of low-quality jobs.[11] As in other areas of policy, reformers looked admiringly at Germany with its structured system of progression from school to work (e.g. Hamilton 1990), and proposed programs that looked more like the German apprenticeship programs – work-based programs lasting relatively long periods of time (e.g., two years), capped by a "certificate of mastery" or other portable credential. The early conceptions of STW programs seemed to emphasize work-based learning as a *replacement for* school-based learning: that is, one solution to low-performing schools would be to abandon the cause of school reform and to place serious occupational preparation in firms themselves, though potentially at public expense.[12]

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10 Again, these are the subjects of my companion paper for this conference, "Learning to Earn all over again: Current Issues in Vocational Education and Job Training in the United States".

11 See Osterman (1980) for a now-conventional description of the youth labor market. This view has been challenged from two directions: Klerman and Karoly (1994) argue that the vast majority of high school graduates – but not high school dropouts, and perhaps not some specific groups of students like minority youth – make the transition to "adult" jobs within a relatively short period of time; and Heckman and Smith (1994) have argued that what appears to be aimless "milling around" may in fact be efficient search behavior. But social concern with the youth labor market and "milling around" has a long history in this country, dating at least to the turn of this century when educators and child labor reformers complained about the "wasted years" between leaving school and finding stable employment.

12 This is consistent with the American practice of providing "second chance" institutions rather than reforming "first chance" institutions. That is, the failures of the K-12 schooling have been met with efforts to create "second chance" institutions like community colleges and job training programs,

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As this conception of apprenticeship became incorporated into the School to Work Opportunities Act of 1984, it changed into a program with three distinct elements:

- School-based learning, in which academic and vocational education would be combined within "career majors" and linked to at least one year of post-secondary education. This conception of schooling was consistent with reforms in vocational education – the integration of academic and vocational education, and "tech prep" efforts linking high schools and community colleges – articulated in 1990 legislation for vocational education.
- A work-based component. This was the novel element of the School-to-Work Opportunities Act, and the feature that has attracted the most attention. In the Act itself, this was required to include "a planned program of job training", "paid work experiences", "workplace mentoring", "instruction in workplace competencies", and "broad instruction in a variety of elements of an industry" – certainly a work placement of high quality.
- "Connecting activities" to make school-based and work-based learning consistent with each other. Potentially, connecting activities would operate to make school-based learning relevant at work, and would allow the lessons of work placements to enrich and provide a context for school-based learning – in place of the case of work experience programs of the past, where schooling and work were completely independent and in no way mutually reinforcing.

The school-to-work legislation also contains hints of pedagogical reform since it calls for "the use of applied teaching methods and team-teaching strategies", and perhaps (by implication, at least) pedagogies that are more contextualized, student-centered, active or constructivist, and project- or activity-based. In addition, the legislation called for creating a coherent "national framework", and the clear intent was not to support yet another categorical program but instead to create a more unified school-to-work system.

Because STW is a complex idea with many parts, different advocates can stress different elements of the program. The advocates of education reform have seen STW as a lever to reform high schools, replacing the standard academic track with its conventional disciplines and didactic instruction by a series of career majors, or broad groupings of education, that provide a focus and a context for academic instruction.[13] The advocates of work-based learning and the partisans of the German system have emphasized its role in generating work-based placements, and have been much less concerned with the school component. The proponents of new forms of assessment and certification have emphasized the creation of certificates of mastery as ways of driving the content of school programs, certain that the creation of such certificates will in fact change what is taught in STW programs. And the proponents of school-business collaboration have seen STW as an opportunity to bring employers and educators together over an issue of common concern: the preparation of individuals competent to make their way in the workplace.

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rather than reforming schools themselves. While this reflects a generous and inclusionary impulse, it also creates a chaotic "system" of overlapping and partially redundant institutions.

[13] I include myself in this group. For a much fuller statement of this kind of school reform, see Grubb (1995), or my companion paper for this conference "Learning to Earn all over again: Current Issues in Vocational Education and Job Training in the United States".

One implication for firms and firm-based training is that training within workplaces would become part of a more coherent schooling and training system, giving employers a greater role in directing the content of formal schooling and allowing school-based and work-based learning to be complementary through "connecting activities". Furthermore, the cooperation of educators and employers, and the creation of certificates of mastery, would allow the skill levels of the labor force to be increased. This is, in short, a vision of how to move from the low-quality schooling, low-training equilibrium of the current system toward high-quality schooling combined with more firm-based training, more consistent with Germany's dual system in place of the current American structure where school and firm-based training are completely independent of one another.

It is, of course, far too early to tell what school-to-work programs will become; the legislation is too new, and most states and localities are still in early planning stages.[14] It is possible that school-to-work programs will be used to reform high schools by instituting "career majors" or occupational clusters linked both to post-secondary education and to work-based learning – a fundamental restructuring of the school and work system. But already there are signs that this vision is fraying. The developments so far seem to have taken two forms.[15] Some states have concentrated on creating the task forces, councils, forums, and other groupings in which the discussion of STW alternatives can take place. While such efforts are valuable in getting together participants and "stakeholders" who normally do not converse, there seems little purpose behind these convocations – not much vision, little sense of how substantial the changes are that must take place, and more commitment to process than substance.

Other states have concentrated on getting pledges from employers of work-based placements. In turn, these placements will be made available to students in high schools through a state (or perhaps in a local region). In these efforts, the dominant problem has been the one about how to motivate employers to participate – since employers in the United States do not provide a great deal of firm-based training in any event (as the prior section illustrated), and certainly not to individuals like high school students who are uneducated, inexperienced, and are not yet permanent employees. Sometimes recruitment efforts can depend on charitable motives to get employers to offer placements – though charity is a poor basis for a system of firm-based education; sometimes employers look upon such work placements as sources of low-cost but highly motivated labor – though such motives are unreliable ways to develop work-based placements that are truly educative. Only under special circumstances is it possible to get firms to view work placements for students as mechanisms for developing the workforce as whole, a collaboration from which they will directly benefit in the long run.[16]

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[14] There are, however, numerous descriptions of models for school-to-work programs; see Stern et al (1995); Pauly, Kopp, and Haimson (1995); Goldberger, Kazis, and O'Flanagan (1994); and Villeneuve and Grubb (1995).

[15] It is very hard to know what is going on in a country as vast and sprawling as the United States; I have relied on the survey of the National Governors' Association (1995) as well as a discussion with Patricia Brown who carried out the survey, and conversations with individuals (but not formal field-based research) with individuals across the country.

[16] In a few places in the United States co-operative programs of high quality have developed, where employers can clearly articulate a "grow-your-own" philosophy of developing the most appropriate combination of general and job-specific skills through cooperation with educational institutions – rather than using co-operative programs as a source of low-cost labor; see, for example, Villenueve and Grubb (1995) on the programs in Cincinnati.

Notwithstanding the difficulties of recruiting enough employers, the approach emphasizing the work-based component has generally ignored school reforms. Because the number of work placements for any one school is likely to be quite small, there are few possibilities for using them to generate school reforms, or "connecting activities". The best that can happen is that a relatively small number of students – for example, 20 to 50 students in a high school of 2,000 student, concentrating on those considered "at risk" of dropping out – could have after-school work placements, but typically there would be too few students for the work component to be anything more than a small additional program, competing with other after-school activities (football, the drama club, hanging out with friends), but without changing the structure, the content, or the pedagogy of the high school one whit. In this form work placements will end up as additions to the roster of after-school options for a small number of students, attractive as sources of income and potential labor market experience, but not a way to move toward a different system of occupationally-focused schooling and more abundant firm-based training.

Indeed, in historical terms this is the most realistic outcome, replicating the low-quality work experience programs that were widely supported during the 1970s without ever making much difference to students (Grubb 1994; Kantor 1994). Over time such efforts would probably wither, as did those of the 1970s. A brighter possibility is that school-to-work programs will generate another version of the "triple track" approach, creating a high-quality school-to-work program based on career majors and linked to work placements for small numbers of non-college-bound students – but leaving unchanged the conventional college preparation track for small numbers of students bound for four-year colleges as well as the remaining "general" program for the great mass of students.[17] This possibility, while beneficial to those in the high-quality school-to-work programs, would fail to realize the vision of generating a radically different system of moving from schooling into employment that is at the heart of the STW movement.

A final and potentially fatal problem is that Congress is likely to rescind some or all of the funding for school-to-work.[18] If the federal government in the United States acted largely to establish visions of good practice and provide technical assistance for states and localities to carry out innovations with their own resources, then this would not matter much, since the federal funding for school-to-work efforts has been paltry. But in fact federal legislation works largely either by providing funding for innovations that most states would not fund on their own – and therefore are unlikely to support when federal financing disappears – or by leveraging state funds, for example through matching grants or matching requirements (see Peterson et al 1986). Therefore I anticipate that the funding of school-to-work programs, and for the work-based learning that is the most novel element of STW, is likely to dwindle rapidly once consolidation is enacted.

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17 The "triple track" approach emerged most conspicuously in the academic, vocational, and general tracks that persist in practice if not in name, and in the life adjustment movement, with its program of life adjustment education for the 50 percent of students for whom neither academic college preparation nor vocational education was appropriate.

18 At the moment of writing in November 1995, both the Senate and the House have passed legislation that consolidates a number of existing vocational education and job training programs, including the School-to-Work Opportunities Act, and allows states great freedom to decide how to spend these funds. The final form of legislation could change, of course, though no one predicts that school-to-work will survive as a separate program. While states will then have the freedom to continue funding school-to-work efforts, and work-based components more generally, there will be no special pressure in federal legislation to do so.

A cynical (but realistic) view of the school-to-work legislation is that it is a good example of "piddle politics".[19] It has certainly captured the attention of educators and business leaders not normally interested in occupationally-oriented education, and it presents an image of federal initiative – devoted to building educational "systems" instead of trifling programs that leave basic systems unchanged, with opportunities for states to craft their own creations amalgamating federal and state resources – that is an excellent model to follow. But the amounts of money involved – an original authorization of up to $300 million a year vanishing at the end of five years, intended only as seed money, with only $115 million appropriated for 1995 – are piddling compared to federal vocational education funds (about ($1.3 billion), federal job training funds (about $5.8 billion), total public spending for secondary education (around $85 to $90 billion), total spending for secondary vocational education (perhaps $15 to $20 billion), or any other relevant comparison. Unless the federal government can promote a clear vision of school-to-work programs to galvanize others into action with state and local resources, instead of providing funding incentives as it usually does, the school-to-work legislation seems more like a symbolic gesture than a commitment to reconstructing the transition from school to work.

The saga of the school-to-work effort in the United States illustrates many of the difficulties of policy-making in the area of education and training. In this particular case, the central government developed a vision of great power, quite consistent with the high-education, high-training vision borrowed from Germany. But the amounts of money have been trifling, and even these piddling amounts are being eliminated; the communication of the federal vision has been clouded by political in-fighting and bureaucratic preoccupations in Washington; the implementation relies on state governments and local entities motivated more by the small amounts of money than by any large vision; and the complexity of the reform has permitted many different and contradictory interpretations. The sheer difficulty of the task – moving a schooling system that has developed in a very different way for more than a century, and changing an approach to firm-based training that is deeply embedded in American business institutions – would require substantial resources and consistent development under the best of circumstances, but the STW movement has had neither. What starts as promise ends as disappointment, reinforcing the cycle of reforming again and again and again.

3. Other Initiatives: Potential Directions for the Education and Training "System"

As the previous two sections clarify, the *public* initiatives to enhance firm-based training in the United States have been small, inconsistent, and largely ineffective. Firms may be increasing the amount of training they provide on their own – as the figures in Table 1 for 1983 and 1991 illustrate – but changes in the composition of employment and increases in the practices associated with high-skill/high productivity firms (Osterman 1994) are probably responsible, rather than governmental support.[20] Furthermore, the recent political shift to the right means that government intervention is going to become less and less popular, so that the prospects for enhancing firm-based training through public initiative are increasingly remote.

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19 My thanks to Lorraine McDonnell for this apt phrase.

20 A possible exception that I do not examine is the tax treatment of firm-based training, which provides a large, steady source of public support. However, because corporate tax rates are typically lower in the United States than in other advanced countries, the tax subsidies for training are probably lower as well, perhaps explaining some of the differences between the United States and other countries in Table 1. In addition, there is no reason for changes in tax subsidies to explain the changes in firm-based training between 1983 and 1991 illustrated in Table 1.

The other relevant developments in the United States take the form of reforming the education system.[21] One of these is the movement to increase the quality of education – by articulating discipline-specific standards in many of the conventional academic disciplines, by developing new forms of assessing what students have learned that could become state or national performance measures, and by developing methods of evaluating the competence of teachers. This kind of reform has taken many forms, not surprisingly, and has been supported both by proponents of "back to basics" approaches and by proponents of more progressive approaches to teaching. Another is the vision of developing schools that can teach the "higher-order competencies" – problem-solving abilities, communications skills, interpersonal skills – required in the high-skills corporation, but that are poorly taught in schools dominated by conventional didactic, teacher-centered pedagogies dominated by fact acquisition and individualized learning. And a third approach is the effort to discover other versions of more overtly occupationally-oriented education – a "new vocationalism" to replace conventional job-specific forms of vocational education preparing workers for entry-level positions that have clearly not worked well.

It is, of course, unclear which of these approaches will prevail. Indeed, the most likely outcome is that all three will coexist to some degree, replacing the relatively homogeneous educational institutions typical of the United States – the "one best system" (Tyack 1974) – with more varied approaches to purposes, content, and pedagogy, consistent with the enormous diversity of values and background of the American population. I note that this kind of schooling system would be consistent with the market-like mechanisms so beloved in the United States because it would allow parents and children to choose among several alternatives – a possibility, as the proponents of choice like to point out, that is currently reserved for high-income families only.

Whatever the outcome will be, the emphasis in public discussions on school reform, rather than incentives to enhance work-based training, clarifies the bias in the American setting. Governments can reform education but not employer practices, and the most positive outcome possible would be a shift to a high-quality education/low training equilibrium. Such an equilibrium would have to be maintained entirely by regulations and norms within the education system – intrinsically motivating pedagogy, high-stakes tests, graduation requirements, parental pressures, and the like – because there could be no guarantee of support from employment practices and wage structures,[22] as there is in the German and Japanese systems where selection into the best apprenticeships and the permanent employment of the export sector provide economic incentives for strong school performance.

In the end, the motivation of economic decline may not be enough. The schooling system in the United States is subject to too many conflicting pressures, with too many conceptions of what purposes it serves, for economic purposes to dominate. The high status of academic education and the marginal role of vocational education – and by extension more occupationally-oriented education – make it difficult to insist on reform for economic purposes only. The economic decline of a country is of course a national concern, requiring national action, but a weak central government with limited powers to intervene in the economy cannot provide such action.

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21 Again these are the subject of my companion paper for this conference.

22 An even larger systems approach would ask about the support for any particular outcome from other institutions as well as economic institutions – like the family and the basic culture. At the moment, I would argue that familial support and cultural support for high-quality schooling is lacking for the majority of students in the United States, leaving the educational system alone responsible for the development of a productive workforce and responsible citizenry. But the development of this depressing argument requires several additional volumes.

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References

Bartel, A. 1992. "Productivity Gains from the Implementation of Employee Training Programs", (NBER Working Paper No. 3893), National Bureau of Economic Research, Cambridge, Massachusetts.

Becker, G. S. 1975. *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education* (2nd ed.), Columbia University Press, New York.

Bishop, J. H. 1994. "The Impact of Previous Training on Productivity and Wages", pp. 161-200 in L. Lynch (ed.), *Training and the Private Sector: International Comparisons*, The University of Chicago Press, Chicago.

Cheit, Earl 1975. *The Useful Arts and the Liberal Tradition*, McGraw-Hill, New York.

Goldberger, S., Kazis, R. and O'Flanagan, M.K. 1994. *Learning Through Work: Designing and Implementing Quality Worksite Learning for High School Students*, Manpower Development Research Corporation, New York.

Grubb, W.N. 1994. "School-to-Work Programs: True Reform or Tired Retread?", *Education Week*, August 3.

Grubb, W.N. 1995. *Evaluating Job Training Programs in the United States: Evidence and Explanations*, Training Policy Study No. 17., Geneva: International Labor Office, Geneva.

Grubb, W. N. 1995. "Learning to Earn All Over Again: Current Issues in Vocational Education and Training in the United States", paper prepared for the Conference on the Economic Impact of Vocational Education and Training, Monash University-ACER Center for the Economics of Education and Training, Monash University, Melbourne.

Grubb, W. N. 1995. "The Sub-Baccalaureate Labor Market and the Advantages of Co-Operative Education", *Journal of Cooperative Education*, 30(2), 6-19.

Grubb, W.N. 1996. *Working in the Middle: Community Colleges and the Enhancement of the Sub-Baccalaureate Labor Market*, Jossey-Bass Publishers, San Francisco.

Grubb, W.N. and Villeneuve, J. 1995. "Co-operative Education in Cincinnati: Implications for School-to-Work Programs in the U.S", prepared for the Office of Technology Assessment, U.S. Congress.

Grubb, W.N. et al 1993. "Choosing Wisely for California: Targeting the Resources of the Employment Training Panel", University of California, National Center for Research in Vocational Education and the Center for Labor Research and Education, Berkeley, California.

Grubb, W.N., Dickinson, T., Giordano, L. and Kaplan, G. 1992. "Betwixt and Between: Education, Skills, and Employment in Subbaccalaureate Labor Markets", National Center for Research in Vocational Education, Berkeley, California.

Hamilton, S. 1990. *Apprenticeship for Adulthood: Preparing Youth for the Future*, The Free Press, New York.

Heckman, J. and Smith, J. 1995. "Assessing the Case for Social Experiments", *Journal of Economic Perspectives*, 9(2), 85-110.

Kantor, H. 1994. "Managing the Transition from School to Work: The False Promises of Youth Apprenticeship", *Teachers College Record*, 95(4), 442-461.

Klerman, J. and Karoly, L. 1994. "Young Men and the Transition to Stable Employment", *Monthly Labor Review*, xx(x), 31-48.

Lynch, L. 1992. "Private-Sector Training and the Earnings of Young Workers", *American Economic Review*, 82, March, 299-312.

Lynch, L. (ed.) 1994. *Training and the Private Sector: International Comparisons*, The University of Chicago Press, Chicago.

Osterman, P. 1980. *Getting Started: The Youth Labor Market*, M.I.T. Press, Cambridge.

Osterman, P. 1994. "How Common is Workplace Transformation and Who Adopts It?", *Industrial and Labor Relations Review*, 47(2), 173-188.

Oulton, N. and Steedman, H. 1994. "The British System of Youth Training: A Comparison with Germany", pp. 61-76 in L. Lynch (ed.), *Training and the Private Sector: International Comparisons*, The University of Chicago Press, Chicago.

Pauly, E., Kopp, H. and Haimson, J. 1995. *Home-Grown Lessons: Innovative Programs Linking Work and High School*, Jossey-Bass, San Francisco.

Peterson, G.E., Bovbjerg, R.R., Davis, B.A., Davis, W.G., Durman, E.C. and Gullo, T.A. 1986. *The Reagan Block Grants: What Have We Learned?*, The Urban Institute., Washington, DC.

Rogers, J. and Streeck, W. 1992. "Recommendations for Action", Madison: Center on Wisconsin Strategy, University of Wisconsin, Madison.

Seavey, D. and Kazis, R. 1994. *Skills Assessment, Job Placement, and Training: What Can Be Learned from the Temporary Help Staffing Industry?*, Jobs for the Future, Boston.

Soskice, D. 1994. "Reconciling Markets and Institutions: The German Apprenticeship System", pp. 25-60 in L. Lynch (ed.), *Training and the Private Sector: International Comparisons*, The University of Chicago Press, Chicago.

Stern, D. and Ritzen, J. 1991. *Market Failure in Training? New Economic Analysis and Evidence on Training of Adult Employees*, Springer-Verlag, Berlin.

Stern, D., Finkelstein, N., Stone, J., Latting, J. and Dornsife, C. 1995. *School-to-Work: Research on Programs in the United States*, Falmer Press, Bristol, Pennsylvania.

Tyack, D. 1974. *The One Best System*, Harvard University Press, Cambridge, Massachusetts.

U.S. General Accounting Office (GAO) 1990. "Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries", U.S. Government Printing Office, Washington, DC.

U.S. Congress Office of Technology Assessment (OTA) 1990. "Worker Training: Competing in the New International Economy", U.S. Government Printing Office, September, Washington, DC.

Villeneuve, J.C. and Grubb, W.N. 1996. "Indigenous School-to-Work Programs: Lessons from Cincinnati's Co-Op Education", National Center for Research in Vocational Education, Berkeley California.

Weiss, A. 1994. "Productivity Changes Without Formal Training", pp. 149-160 in L. Lynch (ed.), *Training and the Private Sector: International Comparisons*, The University of Chicago Press, Chicago.

EDUCATION AND TRAINING AT THE FORD MOTOR COMPANY

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Ford Motor Company, Melbourne

When compared with the other local vehicle manufacturers, Ford Australia has the most comprehensive range of manufacturing facilities in Australia and as a consequence our education and training needs are also the most comprehensive.

I will go into more detail later in the presentation and outline the extent and range of our education and training programs, many of which have been developed in conjunction with our education and union partners.

The development of a learning culture within an organisation is very dependent on the organisation's corporate culture. Without the right corporate culture, which is supportive and participative, the evolution of a learning culture within that organisation will not occur. I would like to spend a few moments and discuss our corporate culture and how it has supported the development of our education and training programs and partnerships.

To quote a former vice-president of employee relations, Mr Ken MacDonald, at his retirement speech in 1990, the company's corporate culture has evolved in the following way:

- in the period up to the 1960's - authoritarian/autocratic
- during the 1970's - conciliation
- during the 1980's - cooperation/participation
- during the 1990's - partnership

The fundamental change in the company's corporate culture occurred in 1982 when the corporation on a global basis introduced the Mission, Values and Guiding Principles. The M V G P, together with the corporation's vision statement, have been instrumental in facilitating the change in the management style of the company from being autocratic to participative. The next cultural phase beyond partnership will be the evolution to an empowered team based culture.

To further consolidate the company's cultural change, in 1991 the company introduced the business imperatives process, which provides us with the ability to plan for continuous improvement in everything that we do by focusing the company's combined efforts on the strategically important aspects of the business. They include:

- customer satisfaction
- working together
- improving productivity and sales
- helping our dealers and suppliers

The company's vision, M V G P's and the business imperatives process have all combined to provide us with the philosophical framework and the strategy necessary to achieve continuous improvement towards our goal of Total Quality Excellence (T Q E) and continued market leadership.

The above factors, which have combined to determine our corporate culture, provided a strong stabilising influence to the company during the early 1990's when we had to face up to the hard decisions associated with the restructuring of the company. During this period it was necessary to reduce our employee numbers through all levels by 46%, from 14,000 to 7,500.

The economic recession of the early 1990's accentuated the forces of change, which combined to impact on the company and the vehicle industry in Australia. These forces of change may be summarised as follows:

(i) continuing tariff reductions;

(ii) increasing global competition;

(iii) slow rate of productivity and quality improvement;

(iv) underutilised and inadequately trained work force;

(v) declining customer loyalty due to their increasing expectations about the quality of locally produced products and services; and

(vi) the poor financial performance of the company.

These forces of change required new and innovative strategies by the company if it was going to survive and meet the competitive challenges of the future.

The strategies which were identified to cope with the competitive challenges included: organisational restructuring, which contributed to reducing the organisational layers in the company from nine to five; and the development of innovative human resource development programs, which included more effective education and training programs designed to support the business imperatives of the company.

To ensure the company's position we currently spend annually, as a percentage of our salary and wages bill, 8% on education and training, which in real terms, represents an annual investment of over $20 million.

In addition, to support our training and development effort, across the company we currently have 92 salaried and payroll employees actively involved in supporting the process, which represents a ratio of 80 to 1.

As a further indication of the company's commitment to the training and development process, every six weeks the company's senior management group meets for three hours to discuss training and development issues. This initiative by senior management is an indication that they consider education and training as core aspects of the business and no longer the exclusive domain of the employee relations department. This has been a major cultural change in the company.

Naturally, with this level of commitment and involvement by the company with education and training initiatives, it is essential to ensure that it has significant influence on the quality of the inputs and the achievement of the desired outcomes for these initiatives. To support the above, in 1993 we successfully applied for, and were granted, private provider training status by the Office of Training and Further Education in Victoria. Under the company's private provider status, the company is registered to develop and deliver modules from the following accredited courses:

(i) Certificate of Vocational Studies (Vehicle Manufacturing) (career start manufacturing traineeship);

(ii) Vehicle Industry Certificate;

(iii) Advanced Certificate in Technology Management (Automotive Manufacturing) known internally as Ford studies;

(iv) Advanced Certificate in Engineering (selected modules),

(v) Associate Diploma in Engineering, and

(vi) Advanced Certificate in Automotive Development.

The gaining of private provider status helped the company to consolidate much of the earlier work, which had been achieved with our education and training partners, in developing and implementing our strategically important education and training programs.

With the programs we have developed, we have been very successful in establishing a whole range of partnerships with accredited education and training institutions and I will talk more about this aspect in a moment.

Another important factor which has contributed significantly to our success in developing a learning culture was the increased public profile given to vocational education and training in Australia by the Industrial Relations Commission through the implementation in 1989 of the structural efficiency principle (S.E.P.). The S.E.P. laid the foundation for the introduction of on-going development of the national training reform agenda by linking education and training to the industrial agreements. One important outcome of the S.E.P. has been to shift the paradigm from payment for job classification to payment for individual skills and knowledge acquired and used, which is commonly referred to as the competency based approach.

Earlier I spoke about our goal of T.Q.E., which is a never ending journey of striving for continuous improvement in all of our processes and in the way we do our business.

Briefly I would like to expand on this point. Our continuous improvement process model, which was derived from the work of Dr W. Edwards Deming, who was retained by the company as a consultant, clearly demonstrates that to achieve continuous improvement and hence the desired outcomes in a process, we need to be able to control the inputs. In the case of education and training we are talking about all of the inputs in the model. Each of the inputs will, in turn, have an effect on the quality of the outcomes achieved in the process.

What I have outlined so far is that at Ford, we have our own internal disciplines and corporate culture which enables us to strive for continuous improvement in our processes and in everything that we do. The development of effective education and training programs are seen by the senior management of the company as being absolutely essential if we are to achieve our goals of continuous improvement and T.Q.E.

Through our partnership arrangements we have been able to develop a continuum of education and training which starts with English in the work place and progresses on to master degrees and beyond. Our strategy is in line with the comments of Peter Senge of M.I.T. In his book, *The Fifth Discipline*, Peter Senge states that the organisations that will truly excel in the future will be the organisations that discover how to tap people's commitment and capacity to learn at all levels in an organisation.

We believe that the education and training model which we have developed at Ford, in conjunction with our educational partners, is helping the company's employees to achieve their true potential. This is particularly appropriate as we prepare for the launch of the next Falcon.

The company has five key education and training programs which are linked directly to its industrial awards. They include:

(i) C.S.T. Manufacturing Traineeship;

(ii) Vehicle Industry Certificate, incorporating our English in the workplace program;

(iii) Post trade progression program;

(iv) Ford Foundation Studies Certificate; and

(v) Automotive Development Advanced Certificate.

In addition to these five key education and training programs there are a further three company sponsored programs which include:

(i) Foundation Studies/Associate Diploma/Degree in Technology Management via Deakin Australia via C.M.L./Distance Learning Mode;

(ii) a corporate MBA program via RMIT; and

(iii) corporate Master of Engineering in Advanced Manufacturing Technology via RMIT.

To further emphasise the company's commitment to education and training, where an employee wishes to undertake an accredited course or personal improvement program other than those listed above, then provided the employee is supported by their supervisor the company will actively support the employee by funding course fees and provide some paid time to attend an approved program or course. The growth in formal learning by employees of the company is such that internally we refer to ourselves as Ford University.

Given that the prime focus of our involvement in education and training is to support our core business activity, which is the design, manufacture and distribution of automotive products and services, rather than create additional overheads by hiring a team of highly qualified educationalists on a permanent basis, we have instead adopted what we believe to be a flexible and innovative approach to the development and implementation of our education and training programs.

Our approach has been to utilise secondary and primary teachers who are hired annually under the Victorian Government's teacher release to industry program (T.R.I.P.). T.R.I.P. has proven to be an outstanding success for both parties. For the teachers it has provided an excellent opportunity to receive continuing professional development in a challenging, culturally different but relevant environment. For the host organisation, it can effectively utilise the trained personnel to achieve specific corporate objectives. In our case it has provided us with the opportunity to fill short gaps in our skills profile to maximise the opportunities under the national training reform agenda.

To enable us to achieve our corporate objectives we have established partnerships with the following educational bodies: the National Automotive Language and Literacy Curriculum Unit, the Adult Migrant Education Service; TAFE via the Gordon Technical College, Batman College of TAFE, Broadmeadows College of TAFE and Outer Eastern College of TAFE; Deakin University; RMIT University; University of Melbourne; the National Automotive Industry Training and the Victorian Automotive Industry Training Board; and the now disbanded Victorian Education Foundation. In all cases we have worked cooperatively with our union partners in the development of these programs.

Out of all this hard work on developing partnerships in education and training, what has been the bottom line for us at Ford Australia? I am pleased to say that, if you consider some of the Key Performance Indicators (KPI's) over the period since we commenced the implementation of these programs in 1991, we have been able to identify some positive trends. In discussing these positive trends in the KPI's they should be viewed in the context of the holistic approach we have taken to our change process.

1. Customer satisfaction levels, a key indicator of the quality of our products, has shown significant improvement. For example in 1987 our customer satisfaction rating for Falcon was in the order of 57%. Currently, it has increased to over 84%, a 27% improvement, which by any criteria is a significant achievement. The challenge will be to maintain and improve on this figure, particularly as we move to launch the new Falcon.

2. Overall, productivity improvement across the company, measured over the last four years, has also significantly improved.

3. Another general indicator of the positive change in the culture of the company is that the company's absenteeism fell from a high of 8% in 1990 to a low of less than 4% in 1994.

4. In 1992, Ford Australia's plastics plant was successful in achieving the corporation's world wide Q1 rating, which is now the minimum requirement.

5. As a sequel to the plastics plant's achievement of the Q1 rating in 1992, during 1994 Ford Australia's stamping operations, engine and castings operations at Geelong and the car assembly operations at Broadmeadows were all successful in achieving the corporation's world wide Q1 rating.

6. In 1993 Ford Australia was awarded the Australian quality award for the large industry sector.

7. In November this year, Ford Australia was awarded the coveted 1995 Employer of the Year award by the Australian National Training Authority.

These major achievements are key indicators of our success and progress in our journey towards continuous improvement and Total Quality Excellence.

We believe our education and training programs, when combined with the synergies from our other people programs, are contributing to the continuing success of the company.

COMPETENCY BASED TRAINING: HAS IT ALL GONE WRONG?

Peter Ewer
Union Research Centre on Organisation and Technology
and
David Ablett
Australian Manufacturing Workers' Union

We do not come from an education background, and if we had to give ourselves a professional title, we would probably settle for labour market analyst, from a trade union perspective. We are, therefore, not solely interested in the *economics* of vocational education and training, and what we have to say will be as much about the politics and equity of competency based training (CBT) as about its economics.

We first became aware that CBT was about to sweep the landscape of vocational training in 1988, while Peter Ewer was working in one of the Accord's tripartite research bodies, which had in the previous year launched *Australia Reconstructed* onto an unsuspecting body politic. Most of our work at that time was to carry the project of national restructuring further by implementing Laurie Carmichael's vision of 'life-time learning', to which end we set about assisting the industry parties to engage in award restructuring. Part of this support involved funding and organising tripartite missions, along industry lines, to look at skill formation and industrial relations arrangements overseas. The first of these missions involved the metal and engineering industry, and its report – *Toward a New Metal and Engineering Industry Award* – was released in the second half of 1988.

Looking back in retrospect, this discussion paper was a curious blend of British and German practice. At least as we recall it, the departmental representative on the mission was particularly keen to see the mission endorse the embryonic British system of CBT. This was no doubt clever institutional politics, because the Dawkins' discussion papers were already putting in train the development of education markets, and CBT seemed to offer a ready made way to provide an on-going space for public policy bodies as regulators of training outcomes. How this enthusiasm for CBT was to be reconciled with the report's simultaneous passion for the German apprenticeship system is more problematic to us now than it was at the time. This enthusiasm for German practice was naturally enough particularly pr nounced among the metal unionists, who were comforted by the prominent role played by unions in German training institutions and, of course, by the very concept of a modern and widely accessible apprenticeship system.

Whatever the conceptual confusions, grandiose reform projects of this kind tend to generate their own labour markets, and Peter quickly found a demand for his services in the National Research Centre of the then Amalgamated Metal Workers' Union. At least within the union movement, a lot of the spade work in the late 1980s for award restructuring and training reform was performed in the AMWU. This is an important point to make about CBT, because training reform was largely about solving a whole series of *industrial* rather than pedagogic problems; and this was just as well, because we were singularly badly qualified to analyse CBT as a pedagogy.

These industrial priorities ranged from the universal to the prosaic. At its most ambitious level, training reform was going to deliver a 'high skill-high wage economy', a goal borrowed directly from Sweden and Germany. Here is the first and most fundamental problem with training reform from a union or social democratic perspective – put simply, training reform was expected to carry far too much weight in economic and political terms. After the union movement's initial successes under the Accord in the area of industry development, by 1987-88 the political space for a more interventionist industry policy had been closed off. Training reform thereby became a kind of 'industry policy by other

means', when economic performance is, of course, much more heavily and directly influenced by patterns of investment – including levels of public infrastructure spending – demand and corporate strategy.

Rather than confront this failure to influence the most crucial arbiters of economic performance, the union movement allowed itself to believe that industry restructuring could be kept going along a path of modernisation by a notion of 'life-time learning'. Now, assuming for the moment that this idea has an conceptual utility beyond the common-sense, Australian institutional arrangements were arguably badly placed to support it. To begin with, most industrial awards contained a range of classifications defined by job task, but with only limited career paths to move between them.

To overcome this deficiency, awards were restructured by broadbanding classifications into skill-related career paths. On the training side, this meant the development of a whole raft of new credentials, involving those sections of the workforce who had traditionally not been part of the apprenticeship system. This included production workers in manufacturing, and a wide range of occupations in service industries, many of them the major sources of employment for women in the paid workforce.

We would still contend that for these groups, training reform was a good idea. The development of these new recognition and credentialling arrangements promised to address the inequities of the traditional apprenticeship, particularly its institutionalised sexism. And CBT seemed to have a specific role to play in this endeavour, by providing the means by which the experiential learning of those already in the workforce might be recognised.

So we do not wish to pan CBT simply for the sake of it. If it has done nothing else, CBT has encouraged the industry parties and training bodies to think about how the work traditionally performed by women might be recognised, and there has been good work done in many of these industries like health and community services.

Whether this end might have been achieved by other means is another question, particularly given the intricate and inherent problems which have afflicted the actual development and implementation of CBT.

As most of you will know, the development of competency standards through the various industry training boards forms a key element of CBT. These standards are meant to codify the skills actually required and used in industry. Against these standards, workers can have their existing skills recognised, and from them curricula can be developed for training delivery which nominally reflect the 'needs' of industry. Another potential benefit of this system is that skills recognised through this process should be, thanks to national accreditation, portable between industries and workplaces.

This chain of causation brings us to the first set of problems which besets CBT. The development of competency standards through the ITAB structure is an inherently top-down, technocratic process, through which the industry parties, and contract researchers, specify what they think workers *should* know. The problem here is that competency standards, and their intricate subdivision into elements and performance criteria, run a grave danger of falling between two stools. If they are closely defined and describe particular job tasks in fine detail, they are vulnerable to irrelevance as technology and work organisation change, leaving the ITABs with a herculean task in keeping them up to date. Given the protracted process involved in developing and validating them in the first place, this threat of irrelevance is a live and present danger. On the other hand, if the standards are written with more emphasis on what one might call a generic approach, with less attention to particular job tasks, they are liable to mean nothing at all. If this is the outcome, then the much trumpeted merger of the worlds of

learning and work will be a paradise postponed, and CBT will have failed to deliver a training system more responsive to industry's needs.

In our minds, the implementation of CBT has not resolved this question of relevance. Even the review of the national training reform agenda performed for the Australian National Training Authority suggested the competency process was having only a marginal purchase on business practice, and Peter's own research on training issues in enterprise bargaining certainly confirms that suspicion. Many businesses are simply uninterested in the CBT process, since it adds nothing to their bottom line, even though many of them have quite sophisticated in-house training programs. In case studies Peter has conducted with his colleague Meg Smith, service sector organisations were found with a real commitment to skill formation which either had not heard of, or were not interested in CBT. Moreover, in other research on training issues in enterprise bargaining, Meg and Peter found that the industry which is taking up the competency process with greatest vigour is metals and engineering, which as you will know is an industry which already has a longstanding tradition of structured training, at least in the trade areas.

This, of course, is a particularly sharp problem for women – competency standards that codify their skills for the first time are hardly much of a step forward if such standards find little practical application. And because of the declining strength of the union movement, particularly in service industries, the capacity for organised labour to be a flag bearer in this project is low and weakening. At the very least, this suggests to us that a kind of 'affirmative action' program is required to bridge the gap between the ITABs and workplace practice. Granted many businesses are simply disinterested in the competency process, rather than hostile to it, it must fall to the public sector to intervene through a program that takes competency standards into the field and gets women the skill recognition they are entitled to.

Partly this question of irrelevance has to do with the complexities of the standards setting process. By definition, the ITABs are structured according to industry – in reality however, workplaces actually employ a variety of people in different occupations. Take the hypothetical case of a community service organisation providing residential aged care. Assume also that this organisation is run by a benevolent employer, deeply committed to formally recognising the skills of the mostly female workforce. Such an employer, and/or the unions involved, would have to assemble competency standards from not one ITAB, but from a number. Those workers providing direct care would find their standards developed by the health and community services ITAB. The kitchen staff however, would find the standards most relevant to them had been developed by Tourism Training Australia. If the organisation also employed a plumber or electrician as a general maintenance person, their work would again be codified by a different ITAB. And if there were any registered or enrolled nurses present, they would not find competency standards available at all, because of the resistance of the relevant professional bodies to the application of standards in the nursing profession. The well-intended employer of our imagination therefore has to battle through three or four ITABs, collecting standards as they go – and paying roughly $200 a time for the privilege – before even beginning to think about which standards might be relevant to the work as it is actually performed. Small wonder many employers in practice prefer not to bother.

Leaving this problem to one side, one of the reasons for the gap between industry reform and workplace practice is that the industrial relations community decided to change horses in mid stream. The various parts of the training reform agenda – the Australian Standards Framework and the Australian Qualifications Framework in particular – were designed with *award* restructuring in mind. These frameworks attempt to provide the means by which competency standards and vocational qualifications can be judged equivalent across industries, in line with the wage relativities found in the skill-based classification structures of the modernised awards. When enterprise bargaining superseded award restructuring, we were left attempting to implement a training strategy whose rationale lay in centralised wage bargaining, while the wages system itself had been decentralised. In short, we contend that the industrial infrastructure required to disseminate the unified model of training reform was marginalised by enterprise bargaining before it had time to become operational.

One consequence of this marginalisation is that the benefits of portability and accreditation claimed for training reform are now in some jeopardy. This can be seen in two developments. First, in some industries, the 'modular' nature of the new system allows vocational qualifications to be made up by mixing and matching, with some 'core units' beneath a large range of 'specialisations'. Ostensibly, this is designed to suit the needs of the individual, but more especially it suits the needs of the employers, most of whom are only prepared to pay for training directly relevant to their work. The result is a potentially large variety of training mixes within the one qualification, which lessens the advantages of portability, since workers moving between firms will need to convince their new employer that their particular specialisations are relevant to that employer.

The second threat to portability is arguably more serious still, and can be found in the decision of MOVEET to provide an 'enterprise stream' within the competency accreditation process. This decision is obviously the training equivalent of decentralised wage bargaining. While MOVEET agreed to the enterprise stream provided the standards were nationally accredited, this seems to us to be something of a contradiction in terms. National accreditation of an individual organisation's competency standards may seemingly protect portability, but in reality the test for accreditation is whether qualifications so endorsed are recognised as valid within and across industries. To be blunt, why would employers accept the relevance of standards and qualifications developed by their competitors? How many training institutions will provide articulation for these standards?

The next concern we would like to register about the actual practice of CBT is the extent to which standards attempt to define acceptable personal aptitude and even appearance, rather than skill. The easiest way to discuss this distinction is to refer to some standards themselves. Take, for example, an element of a unit that attempts to specify effective participation in working relationships. This element requires employees to 'present a positive image of the industry'. The performance criteria for this element include the following:

> Industry and enterprise standards of personal presentation are met, with regard to:
>
> - personal hygiene;
> - grooming;
> - poise and deportment;
> - speech;
> - etiquette;
> - dress or uniform; and
> - body language.

We can accept that some of these performance criteria may form part of the employment relationship in some industries. In our minds however, personal appearance does not constitute a skill, and the vocational education and training system is engaged in something other than skill formation when it does conflate the two. We would also suggest that such performance criteria run pretty close to the wind in terms of equal opportunity, affirmative action and anti-discrimination principles, if not the relevant legislation. How, for example, would people with physical disabilities, or people who choose to dress in particular ways for religious reasons, fare under competency standards of this sort?

Take another example of competency standards which have a somewhat liberal definition of skill. One element of a unit, again dealing with effective working relationships, requires employees to 'develop oneself within the job role to enhance performance'. The performance criteria for this particular piece of new age metaphysics include among other things:

- realistic goals for self improvement are set continuously and a process is implemented to achieve them;
- personal feelings are controlled so as not to affect work performance; and
- procedures are put in place to develop self esteem.

It is often said that you cannot legislate against stupidity, and we are tempted to add that the vocational education and training system will not be able to legislate for personal development. To us, what appears to be going on here is a process of blaming the victim. The industry responsible for these particular standards is characterised by casual, part-time and temporary work, much of it performed by women on low pay. If these people are unable to feel that their work is contributing to a process of self-realisation, we would speculate it is because the organisation of the work encourages them to feel marginalised, if not disposable. In these circumstances, we are not sure what the vocational education and training system is doing when it appears to ask people to deny their own experience of work.

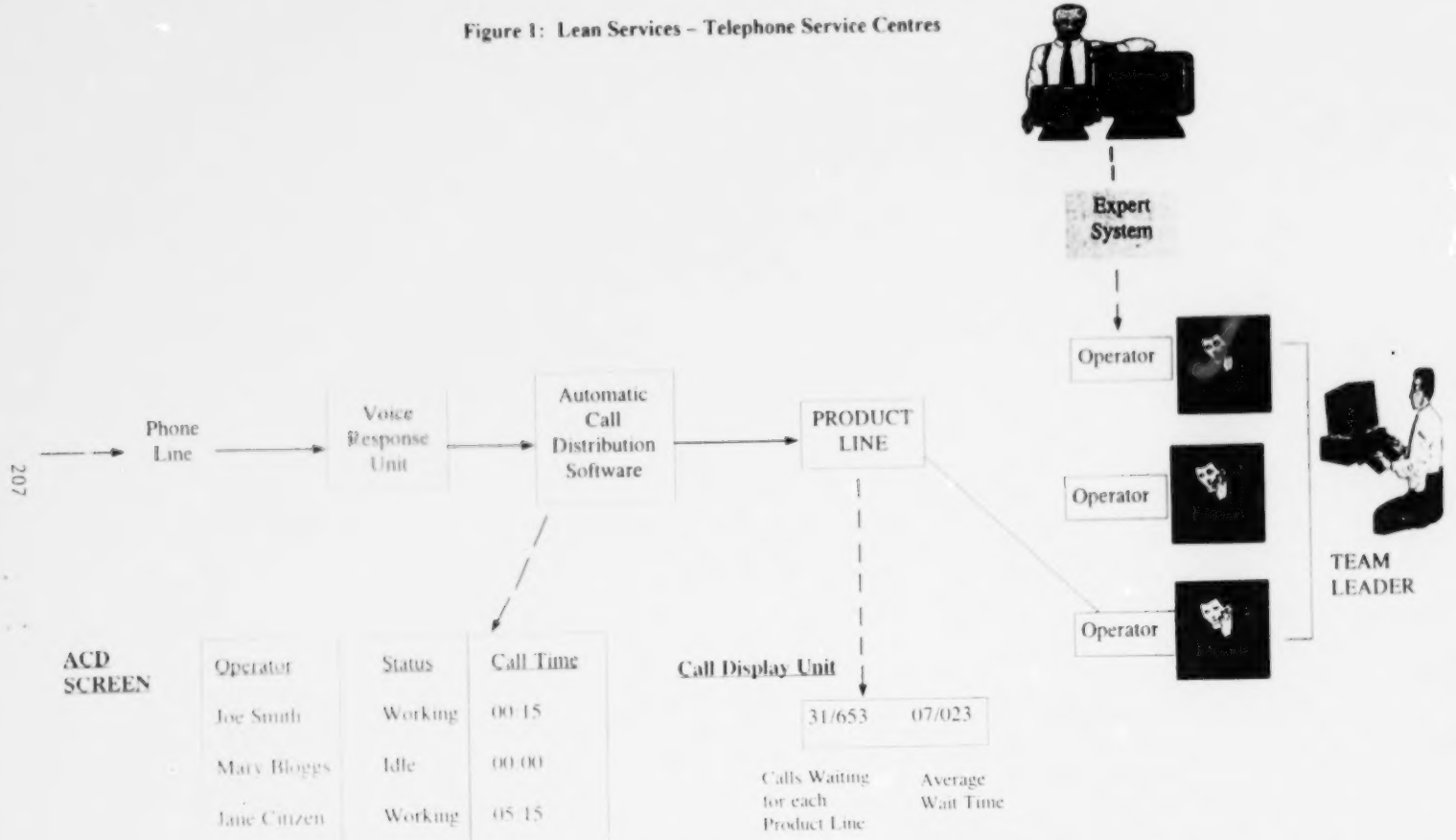
We explore the relationship between skill and work organisation in more detail, via reference to the labour process in telephone call centres. Figure 1 provides, in abstract form, a sketch of how work in these centres is organised. The important features of this form of work organisation are the capacity of the technology to control the pace of work, via the automatic call distribution software, and the transparency of the labour process provided to managers through computer monitoring, which can display the work status and duration of call for any operator at any given time.

What can we say about 'skill' in these workplaces? There are distinct skills required of operators in these centres – literacy and numeracy, and keyboard skills spring immediately to mind. But true to the much-maligned Harry Braverman's critique of scientific management, many high-order skills have been hived off by a para-professional elite – the computer programmers, most of whom are men - and congealed in the technology – the database, or 'expert system'. The discretionary judgement and autonomy to be exercised by individual workers is thereby sharply constrained. This extends to the use of standard phrases and greetings, which serve not only to eliminate unnecessary conversation but help to deliver a 'quality outcome'.

Because workers in these environments are largely servants of the technology, management of the labour process requires careful attention to the attitude of employees. Sustaining the motivation of workers in call centres is a perennial problem, to address which a range of game-playing techniques between staff and incentive schemes are often deployed.

We have not yet been able to establish whether competency standards have been developed to cover this type of work, but if we were to speculate on how standards might apply to this type of labour process, we would imagine they would emphasise the control of attitudes that can be found in a number of service industry standards. These include such performance criteria as:

Figure 1: Lean Services – Telephone Service Centres



Source Union Research Centre on Organisation and Technology Ltd

- welcoming customer environment maintained;
- customer greeted warmly according to procedures; and
- courteous and helpful manner demonstrated at all times.

We do not, of course, deny that from a management perspective such behaviour is required. But we would suggest that what this means for CBT is that standards which attempt to codify this type of work are more to do with the control of the labour process, than they are with skill formation.

That CBT should be reduced to a technique of control seems to us now as an outcome embedded in its very design. CBT is about the economic function of vocational training – responding to the needs of industry, bringing the worlds of work and learning together, and all that. The problem, of course, is that if industry uses deskilled, casualised forms of work organisation, all CBT will reflect is the means by which the labour process is controlled.

It is this one-dimensional, economic view of vocational training that makes CBT so problematic. We have made some critical remarks regarding the apprenticeship system, but one desirable feature of that system – the process of socialisation into a craft or calling – seems to us to be one of the unfortunate casualties in the tidal wave of CBT. The history of apprenticeship shows that workers will commit themselves to high skill, high quality work, not out of commitment to their 'customers', but out of a sense of duty to the standards of their craft.

In this respect, it seems that many of the complaints registered against Australia's apprenticeship system over the last ten years have more to do with its incompatibility with the political discourse of the day, rather than its pedagogic weaknesses or gender inequalities. This discourse comprises a world of markets, enterprises and consumers. Loyalty to this trifecta leaves little space for other kinds of allegiances, like those generated by a craft identity. But if we are to do without the commitment to high quality that such a craft identity encourages, the performance of work must be regulated and controlled by other means, and that we believe has been the actual role of CBT.

TRAINING'S ROLE IN IMPLEMENTING THE RESTRUCTURING OF OFFICE BASED WORK IN THE APS[1]

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Introduction

This paper is a progress report of a study of the role of training in the implementation of new office structures, a major organisational innovation, in the Australian Public Service (APS) between 1987 and 1990. The restructuring of the classifications for office-based work in the APS received approval from the Conciliation and Arbitration Commission in December 1987. It represented the largest restructuring exercise ever undertaken in the APS. It affected nearly 115,000 staff, i.e. some two-thirds of all permanent staff in the APS. The restructuring affected every agency in the APS and 38 other bodies which were in statutory relationship at the end of 1987 (with about 5,500 staff in office-based classifications). It was also linked to major restructuring exercises elsewhere in Australian Government Employment, such as those in Telecom and Australia Post. Training was an important element of the implementation of the restructuring exercise: it was important to management, to the relevant unions and to individual staff.

In its document *Towards a Skilled Australia: A National Strategy for Vocational Education and Training* (ANTA 1994), the Australian National Training Authority (ANTA) set down the aims of Australia's vocational education and training system. The aims are twofold:

- '(to) provide an educated, skilled and flexible workforce to enable Australian industry to be competitive in domestic and international markets;
- (to) improve the knowledge, skills and quality of life for Australians having regard to the particular needs of disadvantaged groups'.

That is, vocational education and training (VET) is to be instrumental in contributing to the improved competitiveness of Australian industry, and to the enhancement of the quality of (working) life of individual Australians.

The training undertaken in the APS in the context of the implementation of the new office structures can be seen as being directed at achieving both these aims. Whilst competitiveness usually refers to the performance of private sector enterprises, government Departmentss and agencies are also under pressure, from clients in other areas of government, from industry and from the community, to respond more efficiently and effectively.[2] During the 1980s these pressures were growing as budgets became more constrained and government was becoming more sensitive to the boundaries between it and other sectors of the economy, evidenced, for example, in a growing willingness to contract out or consider the

1 The assistance of Ms Anja Grauze is gratefully acknowledged in helping obtain the detailed material for this project.

2 The OECD (1992) defines "competitiveness" as 'the capacity of firms to compete and, on the basis of their success or "competitiveness", to gain market shares, increase their profits and grow' (p 239).

privatisation of services.[3] At the same time there was increasing recognition that there were linkages between the competitiveness of the traded goods and services and other sectors of the economy including government, ideas captured in phases such as 'competitiveness of nations', an 'internationally competitive public service', 'international best practice', and 'continuous improvement'.

The government was also under pressure in relation to quality of working life issues in the APS. For example, greater attention was being paid to EEO matters, to industrial democracy, career paths for employees, and occupational health and safety concerns.

This study seeks to tease out the contribution of training to the achievement of these aims. It is seen as a means of identifying in a particular context issues concerning the linkages between training, competitiveness and quality of life which may be applicable more generally. Further, in directing attention to the APS changes as an organisational innovation it brings into focus approaches to learning and training developed in the innovation literature. This work is often not taken into account in VET fora yet it is timely, given the attention now being paid to innovation issues by Australian governments.[4]

The paper is organised into four parts. The next section reviews approaches to competitiveness, learning and training taken in the innovation literature. Section 2 gives a description of the new office structures, which represented a major organisational innovation in the APS. The role of training in the effective implementation of the new structure and the associated arrangements is considered in Section 3. Finally, in Section 4 some provisional conclusions are drawn about the role of training in the innovation process within enterprises.[5]

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3 Ergas and Wright (1994) have suggested, in relation to Australian manufacturing firms, that intensified competition, whether through expanded international exposure or otherwise, tends to force managers to tackle inherited inefficiencies. Their resultant actions may include greater emphasis on factors such as research and development, product quality and customer satisfaction, the development of more productive cooperative enterprise cultures, and training. Some of the same factors can be seen at work in the APS: changing technology and changing cultures at the workplace, concerns about productivity and efficiency in the APS and the possibilities for contracting-out and privatisation of formerly APS functions. These factors affected managers, individual staff and unions, and provided a situation in which the restructuring of office-based work could provide benefits for each of the major stakeholders.

4 The case chosen is also of interest because the public sector tends to train more than the average. For example, the recent ABS survey shows that, in terms of external training courses, public sector employees attended an average of 0.25 courses compared to 0.20 for all employees and attended for 5.24 hours on average compared to 3.62 hours for all employees. In relation to the industry "Public Administration" coverage was similar to that for all public sector employees, but hours of attendance were significantly higher at 6.29 on average. Note that in each case there was substantial variation. N = 13,410 for All Employees, 4134 for Public Sector Employees and 948 for Public Administration. Similar findings occur in relation to in-house training courses conducted in the last 12 months: an average of 2.11 courses for public sector employees (2.06 for Public Administration) compared to 1.24 on average for all employees; and an average of 22.0 hours for public sector employees (25.7 for Public Administration) compared to 12.9 on average for all employees. The standard deviations were again substantial. The data are derived from the Australian Bureau of Statistics survey of training (ABS 1993, *Training and Education Experience*, Catalogue No. 6278.0).

5 Another study of training at the enterprise level is being undertaken in a large teaching hospital in Melbourne with Dr Dagmara Madden. The project seeks to estimate the (total) resources devoted to education and training, and also the broad allocation of that total between the employer and staff and between various categories of staff (e.g. by age, sex, previous level of formal qualification and

1. Innovation, Competitiveness, Learning And Training

There is an extensive and burgeoning literature examining aspects of and links between innovation, competitiveness, learning and training at the enterprise level. This literature has been synthesised and reviewed most recently by the OECD (1992), Freeman (1994) and Dodgson and Rothwell (1994).

The importance of innovation for analysis and policy lies in the recognition that technological and other forms of innovation, including the ways the workforce is employed, are a major basis of competitiveness,[6] moreover, the relative roles of innovation and innovation-related factors appear to be increasing (OECD 1992, BCA 1993, AMC 1994, and AMC 1995). The OECD notes that innovation performance is related not only to attributes of individual enterprises, but also depends on the broader set of institutional arrangements in the economy and the interactions among them. Analysts now refer to 'national systems of innovation' to describe these arrangements (Lundvall 1992, Nelson 1993, and Johnson and Gregersen 1995).[7]

Thus, a comparative study of the innovation systems of fifteen countries including Australia has highlighted the importance of education and training arrangements in distinguishing countries that are sustaining competitive and innovative firms (Nelson 1993). The study has found that 'countries differed in the extent to which their public education and training systems combined with private training to provide (a supply of literate, numerically competent people who are trained to industry demands) and the difference mattered' (p. 511).[8]

Innovation is a term where the content has varied over time. Its meaning has broadened to embrace not only technological innovation (OECD 1993), but also managerial and organisational innovations and new developments in services (ABS 1995); and more recently, to include all forms of 'newness' which have a potential to create value for enterprises (McKinseys 1992; BCA 1993). The term has come to focus not only on outcomes (traditionally defined as new and improved products and methods of production) but also on the processes to achieve these outcomes (Industry Commission 1995). Recent models of innovation characterise these processes as continuous and interactive with complex patterns of feedback (OECD 1992, Industry Commission 1995).[9]

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occupational group). Unfortunately, the project was not sufficiently advanced for results to be presented at this Conference.

6 The other main basis, according to the OECD (1992), is "formed by price and cost determinants" (p. 238).

7 Johnson and Gregersen define a national system of innovation as 'all interrelated, institutional and structural factors in a national economy, which affect the innovation process' (Johnson and Gregersen 1995, p. 8). Elements of the national system would include the research arrangements, the education and training system, industry structure, legal and tax arrangements.

8 Thus 'among high income countries Germany, Japan and Sweden came through much stronger in this respect than Britain and Australia. Among developing countries the contrast is equally sharp' (Nelson 1995, p. 511).

9 For example, within the firm market research findings may indicate the need to redesign a product. Thus there is a "feedback" from marketing to design calling for a redesign. There may also be feedback relationships between the individual enterprise and the wider science and technology system.

A number of studies define these innovation processes (of interaction, feedback and change) as 'learning'. Pavitt (1994) comments that innovating firms build on their firm-specific competencies and 'their adaptation and change in the light of experience and further information is learning'. Garvin (1993) argues that continuous improvement requires a commitment to learning. 'How, after all can an organisation improve without first learning something new? ..... Solving a problem, introducing a product, and re-engineering a process all require seeing the world in a new light and acting accordingly. In the absence of learning companies – and individuals – simply repeat old practices'. That is, learning within forms and organisations changes the way work gets done.

Further, these studies indicate how the links between competitiveness, innovation, learning and training might be characterised. First, organisational learning is usually an interactive social process, and organisations and the people within them learn from a *variety of sources*. Freeman (1994) comments that 'the picture which thus emerges from numerous studies of innovation in firms is one of interactive learning' (p. 470). Johnson and Gregersen (1995) argue similarly: 'individuals seldom learn in isolation; rather it is a social process affected by the institutional environment' (p. 6). People learn from their own experience; and from a wide variety of sources outside the organisation, including from clients, suppliers, competitors, universities, R and D agencies and consultants. These sources are additional to the formal education and training system.

Secondly, learning in enterprises can occur through a variety of mechanisms. Freeman (1994) argues that enterprises may learn through informal contacts, formal collaborative arrangements and from joint ventures; licensing and know-how agreements, acquisition, and even industrial espionage. There is also learning from internal sources such as R and D activities and through enhancing linkages between the various areas and departments of the enterprise. Thus, learning takes place through mechanisms in addition to the more familiar training arrangements.

Thirdly, individuals within enterprises may learn through a *variety of methods* of which formal training incorporating instruction is only one [10]. Other methods include: learning by doing, learning by hiring or learning by failing. Pavitt (1994) argues that the relative importance of these different methods varies according to the core competency of the enterprise (p. 363). For example, 'learning by failing' may be relatively important for enterprises which specialise in product innovation, whereas 'learning by doing' may be more important in information intensive firms (such as legal and consultancy enterprises). It may also vary according to the size of the enterprise.

These considerations suggest three factors to be borne in mind when analysing enterprise training directed at improving competitiveness: achieving international best practice or a culture of continuous enterprise improvement. First, unless training leads to changes in the way work is done it does not constitute learning and it does not contribute to innovation and improved competitiveness. Constraints on changes in the way work is done can, in principle, originate with the individual or the enterprise. Secondly, training can represent a larger or smaller share of the total learning activities within enterprises, depending upon a range of factors. Thus variations in the level of formal training among enterprises are not necessarily an accurate guide to the relative levels of learning in those enterprises. Thirdly, given the diversity of sources and methods of learning and the importance of learning to the competitive enterprise, learning how to learn is a critical skill. However, this leaves open the question of whether learning to learn generally, or in specific cases, is a public responsibility or becomes an enterprise activity.

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[10] Drake (1995), in reviewing empirical studies of training in Australia, U.S. and the U.K., noted "the extraordinary range of definitions given to training" (p. 3). His definition of training is that training "uses instruction, on or off-the-job, to build an individual's competence" (p. 4).

2. The Review Of Office Structures

2.1 Background

The Office Structures Review (OSR) involved the reclassification of office-based work within the APS (Selby Smith 1989). It represented the largest restructuring exercise ever undertaken by the APS and as such was a major organisational innovation. Nearly 115,000 staff were covered, 67% of all permanent APS staff at December 1986.

The review process involved extended negotiations between three major public sector unions (the Australian Public Service Association (APSA), the Administrative and Clerical Officers' Association (ACOA) and the Federated Clerks' Union (Taxation Officers' Branch) i.e. FCU(TOB)) and the Public Service Board, which had prime carriage of the Review. The Government had decided that the proposed restructuring should be considered by the Australian Conciliation and Arbitration Commission prior to implementation and, upon reaching agreement, the three unions and the Government put forward a joint submission to the Commission. The Commission accepted the joint submission and the new structure took effect from 24 December 1987. There was an immediate pay increase (4% overall, but a higher percentage for lower paid staff).

2.2 The Existing Classification Structures

Table 1 shows the major classification structures for office-based work in the APS prior to the OSR. The OSR began in the keyboard area and it grew progressively to include the clerical assistant, clerical administrative classes 1 to 5, clerical administrative classes 6 to 11 and Senior Executive Service structures.[11] Overall 107,000 staff were distributed among the major classification groups: 9.2 per cent were in the keyboard grades, 25.3 per cent in the clerical assistant structure, 33.3 per cent in the clerical administrative structure classes 1 to 5, and 30.3 per cent in the clerical administrative structure classes 6 to 11. There were also, in the final stages of the Review, a number of staff in other classification structures doing work closely related to office-based work (e.g. library officers, traffic officers and museum assistants). In total, the final agreement with the unions and the case submitted to the Commission in late 1987 covered 114,990 staff.

The OSR was significant also for the numbers of staff it covered who were in groups designated for equal employment opportunity (EEO). It included more than 90 per cent of all women employed in the APS, who tended to be disproportionately concentrated in keyboard classifications with lower pay rates and fewer career prospects (Selby Smith 1989, p.198), and substantial numbers of APS staff in other EEO groups. These included 1,501 staff who were Aboriginal people or Torres Strait Islanders, 6,987 staff with disabilities and 5,548 staff who were first-generation Australians from a non-English-speaking background.

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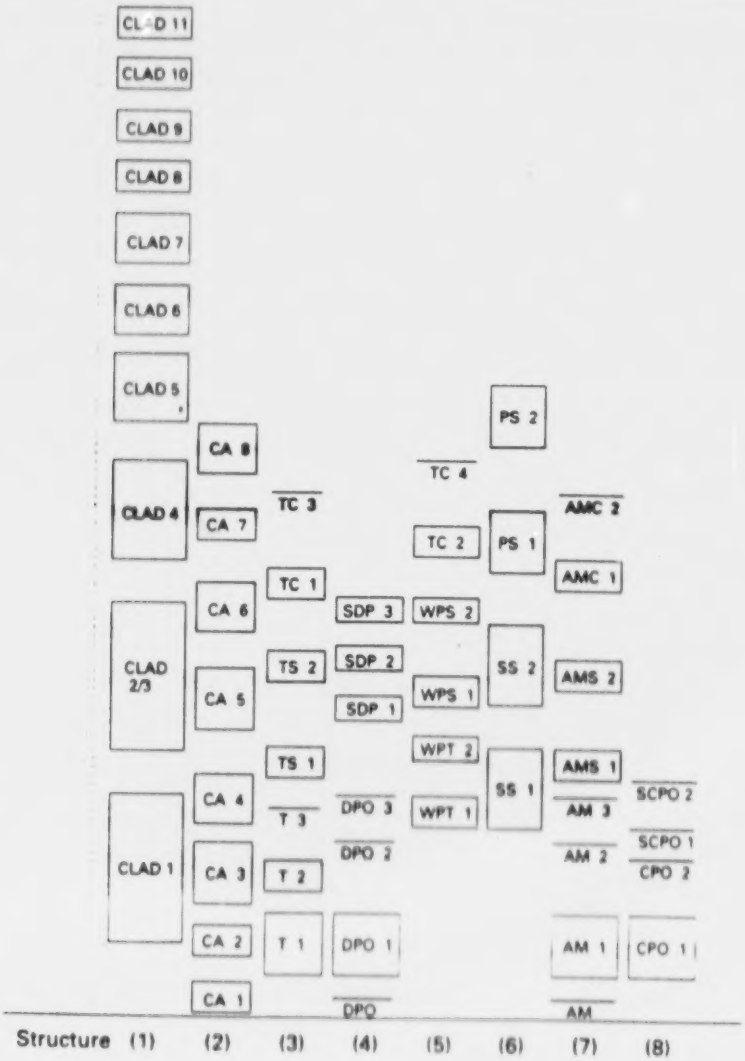
11 Although involved in the case before the Conciliation and Arbitration Commission, the classification structure for SES staff was not altered by the office restructuring exercise; and this structure is given little attention hereafter.

Table 1: Major Classification Structures for Office-Based Work in the APS Prior to the OSR



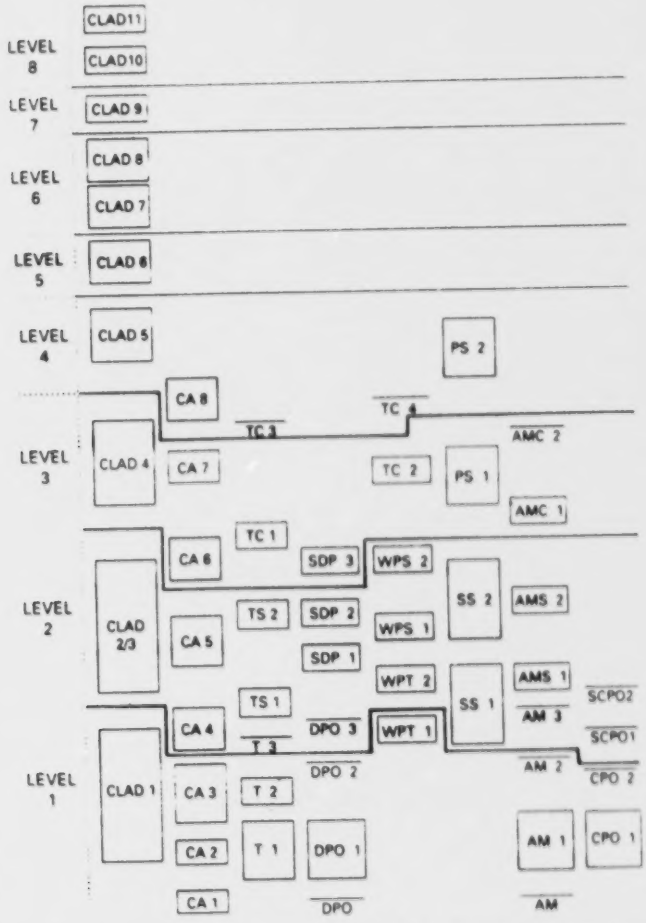
Note: The respective classification structures are: (1) clerical administrative (CLAD); (2) clerical assistant (CA); (3) typist (T, TS, TC); (4) data-processing operator (DPO, SDP); (5) word-processing typist (WPT, WPS, TC); (6) steno-secretary (SS, PS); (7) accounting machinist (AM, AMS, AMC); (8) card punch operator (CPO, SCPO)

Source: Selby Smith 1989, p. 196.

2.3 The New Structure

The new integrated structure which resulted from the OSR is shown in Table 2. The most striking feature is that the total number of classifications, counting separate levels individually, was reduced from 93 to eight levels in the new Administrative Service Officer (ASO) structure. If the comparison is made by reference to the number of separate pay points the reduction is still more striking (from 166 to 43 pay points, excluding junior pay points).

Table 2: The New Administrative Service Officer Structure (compared with the subsumed structures)



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Source: Selby Smith 1989, p. 202.

2.4 Outcomes Sought by Management

A number of problems were associated with the classification structures which existed before the OSR. These problems are discussed in more detail in Selby Smith (1989). They included that: the existing structures inhibited the efficient and flexible organisation of work e.g. through combining clerical and keyboard work; many staff faced very limited career prospects, especially those in the keyboard and clerical assistant structures; the keyboard structures in particular contributed to occupational health and safety problems such as repetition strain injury; the arrangements were producing demarcation difficulties, including between different sorts of work, different equipment and different unions; and that the structures were unresponsive to technological change, which was blurring the boundaries between different sorts of keyboard equipment and between keyboard and clerical work. Thus the existing structures presented problems both to management (e.g. inflexibility, inefficiency, demarcation disputes) **and** to staff (e.g. limited career paths, occupational health and safety risks).

The Public Service Board sought a number of outcomes from the changed classification structures. The main outcome looked for, and which in some sense can be seen to subsume a number of others, was to enable APS agencies to undertake their work more efficiently and with greater flexibility. Related outcomes were to facilitate the move towards flatter management structures, in accordance with modern management thinking, to introduce an equipment-neutral structure, where office equipment of all sorts could be used at each level (with more complex tasks being graded at higher levels), and to reduce the potential for damaging demarcation disputes. These disputes were a significant problem at the time for which there was no obvious solution in sight, given the existing classification structure.[12]

It was also intended that the new structure would provide better career prospects for APS staff, especially for those in the keyboard and clerical assistant structures where pay ceilings were relatively low and promotion opportunities very limited. It was intended too, that the new structure would contribute significantly to more equal employment opportunities in the APS.

The new structure therefore was intended to have benefits for all the major stakeholders. Management stood to gain through improvements in efficiency and flexibility, the reduction in administrative costs due to the simpler structure, and through the improved ability to introduce appropriate technology, new forms of work organisation and new management structures. There would also be benefits arising from reduced friction with staff and unions.[13] Staff would gain from enhanced work and job satisfaction, improved career prospects and reduction in occupational health and safety risks, as well as from the expected (4 per cent) pay increase associated with the restructuring exercise. Clients of APS agencies could expect improved service and taxpayers would benefit from a more efficient and economic Commonwealth Government administration.[14]

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12 The new structure removed this problem, although the development of closer relations between two of the unions (ACOA and APSA) was also a major contributing factor. Subsequently these unions merged.

13 For further discussion from the perspective of an involved union see Fallick (1989).

14 The Government was able to quantify benefits or savings which were expected to occur from the proposed changes. These were presented in its 1987 submission to the Commission and are shown in Appendix 1. The largest of the quantifiable benefits related to reduced higher duties allowance payments (including the associated reduction in administration costs for HDA) and improvements resulting from job redesign. These two items accounted for savings of 1.12 per cent and 0.86 per cent of the salary bill respectively, in the first year following the introduction of the new structure and the associated arrangements, and 1.23 per cent and 1.18 per cent respectively, in each of the second and third years. The total quantifiable benefits were estimated to be 2.71 per cent of the

2.5 Emphasis on Training to Achieve Outcomes

In their joint submission to the Conciliation and Arbitration Commission both APS management and the relevant unions emphasised that to achieve the full benefits potentially available from the new structure, particularly in the longer term, would require high priority to be given to expanded training activities. In turn, the Commission, in its decision of December 1987, noted that it was the responsibility of management to see that work was organised in such a way that these potential benefits would become a reality. The Commission stressed particularly the importance of work reorganisation, job redesign and extensive training (Australian Conciliation and Arbitration Commission 1987a). It is interesting to note that the innovation literature emphasises that changes in corporate management, work organisation, technological change, the development of skills and training processes are all intimately connected; and that changes in one element are likely to cause changes in the others (OECD 1992).

The Agreement between the three public sector unions and the Government, endorsed by the Commission, laid considerable stress on training. The Agreement stated that "central to the success of the new structure will be a multi-skilled workforce. Achievement of multiskilling requires commitment to appropriate training", and "the parties have a commitment to developing a multi-skilled workforce that is appropriately trained and staff that will have the expectation of undergoing periods of training and retraining throughout their working life to enhance their flexibility, career opportunities and job security". The employer made an explicit commitment "to provide resources and appropriate training to facilitate multiskilling and job redesign" (Australian Conciliation and Arbitration Commission 1987b, paras. 7, 8 and 12).

In particular, the Agreement specified that:

- staff would not be required to move to a redesigned job or to perform a greater variety of tasks in a multi-skilled environment until they had received appropriate training;
- Departments would finalise programs for training recruits to the new structure in consultation with unions. The aim would be to ensure that a multi-skilled workforce was prepared and able to perform a variety of tasks; and
- new entrants to the APS would be trained in the appropriate range of office-based skills (having regard to the agreed work level standards and expected flexibility). This had not always been the situation in the past.

On reflection, three points were particularly striking. First, whilst the Public Service Board had laid emphasis on the importance of training to the achievement of outcomes sought, this commitment was at least matched, if not exceeded, by that of the unions. Additionally, the joint undertaking to expand training activities was an important element in securing union commitment to the effective implementation of the restructuring and associated changes. Thirdly, it may have been that the commitment to enhanced training by departmental management contributed to more cooperative attitudes by unions and staff generally, which would yield further beneficial outcomes in specific areas (e.g. introduction of new technology or revised working arrangements), either at that time or later. Thus the commitment to training was not only seen as necessary for the achievement of the specific objectives of OSR; with hindsight, it probably contributed to an improved general climate between management, staff and the unions, which had beneficial effects for the overall operations of the APS.

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annual salary bill of $2,580m in the first year, 3.38 per cent in the second year and 3.44 per cent in the third year after implementation of the Agreement.

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3. The Contribution of Training to the Achievement of OSR Objectives

The case put in the joint submission to the Conciliation and Arbitration Commission in late 1987 was based largely on tripartite investigations of potential benefits in eight large agencies undertaken jointly by the unions, the Department of Industrial Relations and individual agencies.[15] The tripartite investigations were important in developing a strong case for the Commission and, more importantly for our present concerns, laid the basis for effective implementation of the new office structures in Departments.

The Commission in agreeing to the new structure and the associated arrangements noted that, while the pay increase was to be immediate, the new working arrangements were yet to be put in place, since they were dependent on the introduction of the new structure. Against this background the Commission requested the parties to report back to it, outlining the progress which had been made with implementation and the actual benefits which had been achieved. The two report-backs occurred in October 1988 and in February 1990 (Department of Industrial Relations 1988; 1990). This material provides the evidence for this section of the paper.

Of course, by the time of the second report-back it was well over two years since the new structure had been approved and the relative effect of OSR changes compared to other changes on APS work was altering significantly (see Task Force on Management Improvement 1992). This section is primarily focussed on the period from December 1987 to February 1990, by which time 70 per cent of all ASO staff employed in agencies covered in the Department of Industrial Relations' reporting to the Commission[16] had been subject to the job redesign process. Appendix 2 summarises the progress made in individual Departments; it also shows the number of ASO staff employed in each agency.

3.1 Total Levels of Training: Some Quantitative Estimates

The report-backs to the Commission contained a large number of general statements and individual examples of OSR implementation in particular agencies. However, there was much less evidence about the number of staff involved and even less about the financial resources devoted to training. Some illustrative evidence which became available is given below.

- Table 3 shows staff attendance in the **Department of Employment, Education and Training** (DEET) at courses, workshops and information sessions related to implementation of the structure in the period January 1988 to February 1990. It underlines the magnitude of the training required as part of the implementation process; the priority attached to enhanced training by departments, staff and unions; and the importance of extensive training if full benefit was to be obtained from the changed structure.

[15] The eight agencies were: Australian Bureau of Statistics; Australian Customs Service; Australian Taxation Office; Department of Defence; Department of Employment, Education and Training; Department of Foreign Affairs and Trade; Department of Social Security; and Department of Veterans' Affairs.

[16] The Australian Conciliation and Arbitration Commission was renamed the Industrial Relations Commission during the implementation period.

Table 3: Staff Attendances at Courses, Workshops and Information Sessions in Department of Employment, Education and Training

Program	ASO 1-4	ASO 5-8	Total
Information Technology (includes keyboard skills, specific work processing programs, spreadsheets, PC awareness)	1268	954	2222
Clerical and Writing Skills	228	52	322*
Interpersonal Skills**	472	92	564
Trainer Training/Facilitation Skills	176	63	239
Job Redesign	819	674	1493
Other courses identified during job redesign process e.g. Team Management, Meeting Skills	177	184	457*
Total	**3140**	**2019**	**5997**

Source: Department of Industrial Relations, *Administrative Service Officer Structure: Second Report Back to the Industrial Relations Commission*, DIR, Canberra, February 1990.

* Includes figures for States which do not split attendances between ASO 1-4 and ASO 5-8.

** Courses specifically tailored for ASO 1-4.

- The **Australian Taxation Office** provided a summary related to staff development and training in support of OSR implementation and the related modernisation processes. There were five main areas of training: for new recruits (the Tax Administrative Skills Program: TASP), for middle managers and supervisors; multiskilling for redesigned jobs; training for clerical staff in keyboard skills; and training of implementers. The coverage of OSR training extended to 8,500 ASO 1-4 staff and about 4,000 ASO 5-8 staff. In a period of one and a half years following the implementation of the new office structures, training was given to some 2,000 new recruits under TASP, some 1,320 middle managers and supervisors (at an estimated $675 per manager, or about $900,000),[17] some 4,000 staff in multiskilling for redesigned jobs; some 6,000 staff received training in keyboard skills;[18] and 150 office structure implementation coordinators were trained as implementers.[19] In the 1988/89 financial year the ATO received an additional $1.2 million for

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17 Typically these programs lasted 3-5 days and covered topics relevant to the new structures and work design. The programs included: change management, the new skills needed for new roles (e.g. delegation, participation and motivation), and planning for the future.

18 A combination of self-paced, computer based and trainer delivered courses were used to teach ATO officers on a self-nomination basis.

19 The training for OSI coordinators typically lasted 4-5 days.

training to support its OSR implementation initiatives, but the Office argued that a substantially larger sum had been devoted to OSR training from internal ATO resources.[20]

- The **Task Force on Management Improvement** (1992) reported that since the OSR there has been a significant increase in participation in formal training. They found that approximately 30% of all their respondents had undertaken training in the twelve months prior to OSR compared to 72% in 1991. Similarly, for those undertaking training, the average number of training days before OSR was 1.9 days compared to four days in 1991.

- the **ACT Administration** allocated $1.5 million for Office Structures Implementation training and for the purchase of additional keyboard equipment in 1988/89. Probably, most of this was to facilitate multiskilling. There were 3,457 ASOs in the ACT Government Service. If one can assume that this amount per head was involved on average across the APS, then for the estimated total of 114,990 affected staff, total financial costs of training **and** additional keyboard equipment in 1988/89 would be $50 million ($434 per head per year). A complete estimate would also need to include the additional resource cost represented by the time of staff undertaking OSR training and would be substantially larger.

- The **Department of Community Services and Health** informed the Commission in October 1988 that all their ASO staff would attend awareness sessions, which would run for about half a day on average.

3.2 Training in Relation to the Achievement of Individual Benefits

By the time the joint case was presented to the Commission, management's original objectives (as described in the previous section) had been reformulated in negotiations with the unions. The benefits anticipated from the introduction of the new classification structure and the associated arrangements were now organised under eight headings: multiskilling; increased mobility in the workplace; reduced supervision and layers of management; devolution of decision making; improved retention of skills and staff; improved services to clients (including services to government and directly to the public); reduction in the incidence of repetition strain injury (RSI); and fewer resources expended on administration (e.g. for selection processes or promotion appeals).

In terms of ANTA's aims for vocational education and training (see Introduction), some of these benefits can be seen as contributing to the improved competitiveness of these enterprises; others to the enhancement of the quality of working lives of individuals. (Of course, there is some overlap.) Each of the eight benefits is now considered in turn, with particular reference to their relationship with training. The order as presented in this paper differs from that given to the Commission and set out above. The reason is that training was necessary to the achievement **directly** of four of these benefits (multiskilling; increased mobility; reduced supervision; and devolution of decision making). However, once these benefits were secured they were likely to contribute substantially to the achievement of the remaining four categories (reduction of RSI; improved retention of staff; improved services to clients; and fewer resources expended on administration). Thus, the contribution of training is more likely to be **indirect** in these cases.

(i) Multiskilling: The need for multiskilling arose from the desire to integrate work across the former keyboard, clerical assistant and clerical administrative structures. Multiskilling was seen to provide significant benefits for both management and staff: it removed demarcations between work streams and reduced disputes about the categories of staff to operate the technology; it increased management's capacity to allocate staff so as to match better peaks and troughs in workload; and it contributed to improved job satisfaction among staff, e.g. through job redesign, training, and by

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[20] Staff time for training would be a substantial additional component of total training costs.

facilitating the rotation of staff across tasks. However, it became apparent, very soon, that for maximum benefits to be achieved from multiskilling job redesign, work reorganisation and extensive training were also required.[21]

Relatedly, the integration of work across the former keyboard, clerical assistant and clerical administrative structures enabled the creation of an equipment neutral classification structure which, in turn, facilitated the introduction of new technology. This equipment neutrality was important across the whole of the APS, but particularly in those agencies proposing a major re-equipment program and at those times when new technologies were being introduced. These new technologies could be utilised more effectively by combining input functions from formerly separate work streams, but they also implied increased levels of training to upskill staff.

For example:

- in a State Office of the **Department of Veterans' Affairs** new opportunities were now provided for staff to rotate at the same level between sub-sections. With appropriate training, staff became competent at a wider range of duties, such as arranging travel, stores supply and control, control of forms and publications, basic library tasks and switchboard operations. The Department found that relief for staff absences and to deal with peaks and troughs in workload was significantly easier to arrange.
- In the **Australian Taxation Office** the multi-tasking of operations within a section enabled specialised sub-sections to be combined into units that could perform all the specialised tasks. Multiskilling enhanced the benefits of technological change for both management and staff, but expanded training activities were required to operate effectively in the new environment.
- In the **Passports Office of the Department of Foreign Affairs and Trade** (DFAT) multiskilling and the removal of demarcation barriers enabled the Department to address the previously significant problems of monotonous work and lack of career opportunities for staff. The new structure, with additional training, provided staff with the skills to be transferred between different jobs, for much routine work in the passport issuing process to be eliminated and it contributed to the creation of a more flexible pool of staff.
- In the **Australian Bureau of Statistics** it was found that multiskilling, facilitated by appropriate training, increased productivity and job satisfaction in a number of ways, including: allowing workgroups to deploy staff more effectively according to priorities; making workgroups more self-sufficient, thus enhancing their control over their projects; breaking down barriers to the innovative use of technology and establishing working arrangements which were better able to adapt to and harness continued technological change; and enabling jobs to be redesigned so that they were more complete and satisfying.[22]

Overall, the evidence suggests that considerable emphasis was placed on training to enhance multiskilling, particularly within departments and agencies, to facilitate the introduction of the new integrated structure; that the resources devoted to training rose substantially after implementation began; and that while resource levels probably declined later, they stayed at a higher level than originally. Initially, the training emphasis was on training the trainers, raising awareness of the changes and the possibilities of providing benefits for both management and staff, and providing keyboard training for former clerical staff and clerical training for former keyboard staff. However, the

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21 There was informal as well as formal training, including work rotation and on-the-job learning.

22 These examples could be multiplied many times from the evidence put to the Commission and the experience of APS agencies.

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associated training often covered a wider area. For example, in the Department of Immigration, Local Government and Ethnic Affairs a modular training program was developed which focussed on portfolio specific job skills and conversion training requirements. The program included subjects on resource and financial management, fee collection for counter staff, document fraud, interview skills, resident re-entry and the role of the client contact officer. Keyboard and work processing training was also provided for former clerical staff.

(ii) Mobility in the Workplace: Office restructuring facilitated greater mobility of staff by increasing the number of positions within each classification level (e.g. eighteen existing classifications were incorporated into the new Level 2 of the ASO structure). This reduced the administrative processes involved and the cost of deploying staff in the most efficient and effective manner (e.g. fewer higher duties payments were made and there was less need for interviewing given the reduced number of levels). Demarcation barriers between classification groups were eliminated, which further facilitated the movement of staff between sections. Staff could be deployed more effectively to handle peaks and troughs in workloads; and to ensure continuation of output at times when other staff were absent from the office. Staff could gain wider experience, while management was better equipped to respond to priorities through flexible use of staff.

Training was required to achieve these benefits. The Department of Industrial Relations and the unions had agreed that staff would not be required to move to a new job (including a redesigned job) or to perform a wider variety of tasks in the multi-skilled environment unless and until appropriate training was provided. However, in this area it can be argued that training was a smaller subset of learning than in relation to multiskilling, given the opportunities of learning by doing, and through job rotation.

The material put to the Commission in the report-backs and the experience of APS agencies provide a number of examples where the new arrangements permitted greater mobility in the workplace and where additional training facilitated the achievement of the related benefits.

For example:

- In the **Passport Offices of DFAT** the emergence of a multi-skilled workforce, coupled with job redesign and associated training, has had a considerable impact on staff mobility. Appropriately trained staff not confined to traditional classification groups as a result of the introduction of the new ASO structure, are more mobile. This enabled workloads to be spread more evenly.
- In the **Australian Bureau of Statistics** the development of a more multi-skilled workforce had led to greater ease of deployment by management of staff resources as required, greater ease of redeployment in response to employee preferences and an increase in the pool of talent available to fill higher positions. Training made a contribution to the achievement of this OSR objective in the ABS, but so did a range of other aspects of the restructuring (e.g. the removal of the separate classification streams in itself).
- In the central office of the **Department of Education, Employment and Training** there were before OSR a mixture of CLAD 11, 9 and 7 or CLAD 10, 8 and 6 classification profiles which caused difficulties in moving staff between areas and in responding effectively to changing priorities. The reduction in the number of classification levels, 'broadbanding', has enabled greater movement in response to changing working demands or personal preferences. It has also enhanced staff development by making it easier to provide and plan rotation opportunities. Here the benefits from introducing the ASO structure appear to be related mainly to broadbanding rather than training.
- In the Victorian Office of the **Department of Primary Industries and Energy** the February 1990 report-back to the Commission noted that redesign of the work of the revenue and investigation unit had led to substantial improvements in the overall effectiveness and efficiency of the section, reflected particularly in the more even distribution of work and a significant reduction in work

backlogs and overtime. Notable benefits in productivity flowed from the changes within three weeks of implementation, with the number of claims processed increasing from 300-700 per week (with overtime) to 700-2,000 per week with no overtime. The work backlog was eliminated which was up to eleven months in some commodities (Department of Industrial Relations 1990). Training would have made some contribution to this impressive outcome, but the major causes appear to have been elsewhere.

(iii) Reduced Layers of Supervision/Management: This benefit involved the removal of unnecessary supervisory and management functions and levels. Reducing the amount of checking and direct supervision is closely linked with the devolution of decision-making to lower levels in the ASO structure. Reductions in the separate layers of supervision and management resulted directly from the integration of 52 classifications into the bottom four levels of the new structure and from the compression of the former six levels into four in the broadbanding of the upper clerical administrative structure. Subsequent work reorganisation and job redesign has led to a further significant reduction of layering. These changes have increased workflow and efficiency by reducing time delays in communication and by increasing motivation from more satisfying, whole jobs. Responsiveness to clients has improved because there is less filtering of information through the successive layers of management; and more timely information can be provided to management. While there was some need for additional training so that full advantage could be taken of the opportunities presented by this aspect of the restructuring of office-based classifications in the APS, it appears that aspects of the restructuring other than training were generally more important.

For example:

- In the **Department of Defence** the new structure permitted significant rationalisation of the supervisory streams for keyboard, clerical assistant and clerical administrative work. This rationalisation has resulted in a quicker turnaround of work, as staff possess a wider range of skills, have become better trained and have more control over their work processes. The removal of routine supervisory duties from some positions which existed prior to the introduction of the ASO structure meant that these staff were freed to assume a range of other duties (including on-the-job training). This example illustrates that implementation of the restructuring could affect the supply of training in the APS as well as the demand for it in Departmentss.

- In the **Australian Bureau of Statistics** work prior to the OSR was organised into hierarchies of narrow jobs with extensive checking and verification functions performed by supervisors and managers. For example, an ABS publication could have been subject to at least three levels of approval before being forwarded to the publisher. There were also frequent "one on one" supervisory chains at the middle levels of the organisation. In the revised structure there was a substantial reduction in the layers of supervision; and some additional training was required. The redistribution of essential tasks increased responsibility, autonomy, job satisfaction and productivity (especially at the lower levels of the work hierarchy). It also decreased double handling and unnecessary monitoring. Shorter lines of control were found to greatly improve communications throughout the organisation.

- In the **Australian Taxation Office** the organisational structure in place prior to the introduction of the ASO structure inhibited the effective and efficient utilisation of people and their skills, partly because of oversteep and layered hierarchies. Removal of some supervisory levels reduced double handling and improved the speed of work flows.

These examples suggest that training was of some importance in gaining the potential benefits inherent in the movement to the new ASO structure, but less so than in relation to some of the other benefits considered (e.g. multiskilling or increased mobility in the workplace) and compared to some of the other factors involved (e.g. classification restructuring itself and work or job redesign).

(iv) Devolution of Decision Making: This benefit involved the location of authority, responsibility and accountability for the making of decisions at the lowest appropriate level in the relevant workplace. It is, of course, closely linked to reduced layers of supervision/management, and can involve work redesign. The restructuring of the office-based classifications encouraged devolution of decision-making by reducing the number of classification levels in workplaces and through the application of clearer classification standards. Staff also benefited by undertaking more complete and satisfying tasks (and clients through quicker responses and more effective service). By reducing the need for direct supervision, devolution often resulted in the freeing of supervisory resources to perform other functions including training. The joint commitment by management and unions to expanded training activities in the new structure was an important factor underlying cooperative activities including in the area of devolution.

Under the ASO arrangements staff are expected to exercise the decision-making authority – formal and informal – which is appropriate to their classification. This can involve the need to provide additional training. While devolving decision-making has required some additional training in certain cases, the case study material put to the Commission strongly suggests that devolution of decision-making was often associated with other changes such as multiskilling, work reorganisation and job redesign (which may, in their turn, support or even require an expansion of training activities). Also devolution appears to have involved considerable learning other than formal training (e.g. work rotations, informal and on-the-job learning).

(v) Reduction of Repetition Strain Injury (RSI): RSI or occupational overuse syndrome (OOS) had been a significant problem in the APS during the 1980's. Its reduction tended to result from positive measures such as work reorganisation and multiskilling, as well as preventative measures such as rest breaks and pause gymnastics. The parties agreed that, as an interim measure while job redesign was being undertaken, keying would generally be limited to no more than 50 per cent of time in any one day, and that where extended periods of continuous keying continued to be required rest breaks from keying would continue (generally 10 minutes per 50 minutes). In the longer term keyboard jobs were redesigned and new patterns of staff employment were introduced to limit the amount of time which staff spent on continuous keyboard duties. Keying by clerical staff increased greatly. The changes involved considerable additional training for both clerical staff in keyboard skills and keyboard staff in clerical skills. One of the benefits of restructuring was to reduce RSI, the new ASO structure has achieved considerable success in this regard and expanded training was an essential element of the change. Examples of practices which were part of OSR implementation and which were reducing the incidence of RSI were reported to the Commission by the eight major agencies in October 1988 and are also evidenced in the report-backs from agencies to the Commission in February 1990.

(vi) Retention of Staff and Skills: This benefit is linked with job satisfaction, multiskilling and enhanced career prospects; thus the impact of training on retention may be indirect as well as direct. The Task Force on Management Improvement concluded that the implementation of the new structures for office-based work tended to be seen by most affected staff as having had a positive effect on morale, although the uncertainty resulting from the extensive change process itself was seen as having led to some difficulties. Also, some staff felt that the office structures implementation (and the industrial reforms more generally) had led to a raising of expectations among staff, which had then been unfulfilled, resulting in some dissatisfaction (Task Force on Management Improvement 1992, p. 131).

Under the new ASO structure, job redesign and training has tended to increase the retention of staff and skills as more varied, interesting and fulfilling jobs have been created. The reduction of staff turnover has led to savings in the cost of recruiting and selecting staff, in orientation and job training costs and in the costs of diminished productivity during periods when new staff are acquiring and developing skills (as well as loss of output by experienced staff). The services provided to clients have been improved as a result of greater retention of experienced staff. Thus the implementation of office restructuring could

have effects which both increased and decreased training: the implementation process involved retention of staff and skills directly and additional training which could contribute further to retention, but the very fact of increased retention could in some cases reduce the need for training rather than increase it.

For example:

- Prior to the restructuring the **Passport Office in DFAT** had an annual turnover rate of 10 per cent among keyboard and clerical assistant staff (and a monthly absence rate of 12.5 per cent across all Passport Offices). As a result 17 staff years of casual and relief assistance had to be provided (in addition to temporary employment to cover leave absences). These problems were primarily attributable to the monotonous routine nature of the work, poor use of skills and lack of opportunity for staff to enhance their career prospects. Some argued that "cause" and "effect" exacerbated each other in a vicious cycle. Increases in job satisfaction, career prospects and skill usage through job redesign made possible by the changes to classification structures and associated arrangements have enabled turnover and absentee rates to be substantially reduced. This has saved money, improved staff morale and been reflected in improved levels of service to clients. At most, training played a minor role.
- In the **Australian Taxation Office** the benefits of job redesign and other aspects of restructuring have resulted in decreased staff wastage, absenteeism and skill wastage. It appears that training has been a contributing factor to these beneficial outcomes from the ASO restructuring, but not the only factor and perhaps not the most important. Some training had a direct impact but probably more was indirect (e.g. achieved through multiskilling).
- The **Australian Bureau of Statistics** had found that in 1986/87 48 per cent of ABS positions were affected by either promotion, transfers or appointments on a nominal basis. Exit interviews had shown that a significant proportion of staff had left because they were dissatisfied with the quality of their job or their career prospects. Office restructuring has facilitated work redesign in the ABS and involved replacement of narrow specialist jobs. The result has been a significant improvement in the retention of staff and skills. However, training did not appear to be a major factor in improving retention.

These examples suggest that improved training was an aspect of the changes associated with the introduction of the ASO structure which facilitated the increased retention of staff and skills. However, it was not the only factor involved and did not appear to be particularly important, at least directly.

(vii) Improved Services to Clients: i.e. improvements in the quality, quantity, timeliness, effectiveness or efficiency of delivery of services to individuals or groups (governmental, private or public) requiring those services. Clients may be readily identifiable (e.g. beneficiaries, jobseekers, Ministers, veterans), or not so obvious on first inspection (e.g. departmental staff, military forces, defence industrial establishments, hospitals, educational institutions, businesses). Improvements in services to clients have tended to arise from the multiskilling, devolution of decision-making, increased mobility of staff and job redesign which have been encouraged and facilitated by office restructuring and broadbanding. The implementation of the new ASO structure has tended to enable waiting times and backlogs to be reduced and faster, more reliable services to be provided at given levels of resource availability.

The improved levels of service to clients were associated with increased levels of training, but the links generally were indirect being achieved through factors such as multiskilling, increased mobility of staff, greater devolution of responsibility and reduced layers of supervision rather than directly through links between enhanced training and improved levels of service to clients. In addition, there has been some continuing disagreement between operating agencies and the Department of Finance over the degree to which improved efficiencies should be devoted to better service or reduced administrative costs.

(viii) Resources Expended on Administration: These resources include the costs associated with selection, promotions appeals, higher duties allowances (HDA) and salaries administration. By reducing the number of classification levels office restructuring reduced the amount of work involved in these activities and, in turn, the resources required to carry them out. For example, an almost immediate reduction in staff selection resulted from broadbanding. There were significantly fewer HDA variations to be processed because there were fewer classification levels and increased lateral mobility of staff (similarly for promotions). There was a reduced demand for complex organisation and establishment systems, with some saving in resources.

These immediate effects have been enhanced by the work redesign, devolution of decision-making and the reduction in layering made possible by restructuring. The effect has been cumulative, as the full potential for improved organisational efficiency is realised from the ASO restructuring. Training is unlikely to have been important directly in relation to achieving the reduced resources expended on administration, but was more important indirectly, in relation to associated aspects such as multiskilling, broadbanding, lateral mobility, work reorganisation and job redesign.[23]

Table 4 summarises the contribution of training to the achievement of the eight OSR benefits discussed above for the period December 1987 to February 1990. Training made a contribution to the achievement of the benefits from restructuring. Training was more important in relation to the achievement of some benefits than others. The beneficial effects of training in achieving the objectives of restructuring were indirect as well as direct. However, given the extensive nature of the changes involved in implementing the OSR one can conclude that formal training was only one component of the total learning which took place.[24]

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[23] Examples of reductions in resources expended on administration are identified by a range of agencies in their report-backs to the Commission in October 1988 and February 1990 e.g. in relation to higher duties, promotions (and therefore less time devoted to arranging job advertisements, interviewing applicants, writing interview reports (including contacting referees) and processing the successful application e.g. arranging Gazette notifications), staff turnover and classification (for example, the complexities of considering proposals for reclassification were greatly reduced given the much smaller number of separate classifications in the ASO structure. The documentation required to maintain the organisation and establishment systems of APS agencies has been reduced). In the February 1990 report-back to the Industrial Relations Commission the Attorney-General's Department noted that since July 1988 certain corporate services functions had been devolved to major functional units of the Department. Attorney-General's estimated that efficiencies in the classification management function resulted in full year (staff) savings of $113,000 and in the personnel management area a further $68,000. If one could assume that similar savings for the 2,300 ASO staff in the Attorney-General's Department as at February 1990 (i.e. $79 per annum per ASO staff member) would apply on average to the 114,9900 staff affected by the restructuring of office-based work in the APS total savings would be $9 million per annum from this change alone. In its report to the Industrial Relations Commission the Attorney-General's Department predicted further "considerable" savings in the future as a result of the introduction and/or expansion of computerised systems. These were facilitated by the new ASO structure and associated training.

[24] Of course OSR implementation was only one of a range of changes affecting APS enterprises, and it is difficult to determine precisely what the effect was of office restructuring alone or the training specifically associated with it. Training expanded, it contributed to the achievement of OSR objectives and to the achievement of some OSR objectives more than others. However, it is important to recognise that a range of other changes were also occurring and that while the relationships seem plausible strict causality is difficult to prove.

Table 4: Contribution of Training to Achievement of the Benefits from Introduction of New Structure

Benefit	Contribution of Training to Achievement of the Benefit
Multiskilling	Training essential
Mobility in the Workplace	Training essential
Reduced Layers of Supervision/Management	Training not particularly important
Devolution of Decision-Making	Some contribution, generally not major
Reduction of Repetition Strain Injury	Some contribution Training effects tend to be indirect
Retention of Staff and Skills	Training effects tend to be indirect
Improved Services to Clients	Training effects tend to be indirect
Resources Expended on Administration	Training effects tend to be indirect

4. Conclusions

Four conclusions are drawn about the role of training in the innovation process within enterprises, drawing particularly on the experience of OSR restructuring. First, training, defined as a formal process incorporating instruction, appears to have made a significant contribution to effective implementation of the new structure for office-based work in the Australian Public Service, a major organisational innovation. However, there were forms of learning other than training involved in the implementation process which emphasises that training is a sub-set of learning in the workplace.

Secondly, the relative importance of training in OSR implementation varied among the different objectives of the restructuring exercise. Further, the contribution of training could be indirect as well as direct. Training also appeared to be a varying proportion of overall learning in relation to the achievement of some objectives than others. Finally, training has a clear time-cycle. In relation to the implementation of OSR restructuring, training was much greater in the implementation phase, after January 1988, than in the planning, development and negotiation phase prior to the decision of the Commission. However, it appears that training remained at a higher level than prior to restructuring.

Thirdly, the study confirms that changes in work organisation, technology, corporate management arrangements and the development of skills and training processes are all intimately connected. Changes in one element are likely to cause changes in the others. Analyses of the effects of training will be incomplete if they do not take these interrelationships into account.

Finally, training was seen generally as a means of achieving agency objectives rather than undertaken for its own sake. That is, training was instrumental in achieving various agency ends, rather than an end in itself. However, it is apparent that an expanded commitment to training by APS management and individual agencies was also important in securing cooperation from other major stakeholders (relevant unions and staff) in the introduction of other efficiency enhancing changes which were wider than, perhaps even unrelated to, OSR implementation.

Appendix 1: Estimated Quantifiable Benefit/Savings Related to Second Tier Agreement Covering Office and Related Classifications

Benefits Related to or Associated with Restructuring	Year 1 $m	% of Salaries Bill	Year 2 $m	% of Salaries Bill	Year 3 $m	% of Salaries Bill
Reduced HDA payments	24.6	0.95	27.5	1.06	27.5	1.06
Reduced administration costs of HDA	4.5	0.17	4.5	0.17	4.5	0.17
Reduced administration costs for promotion	3.8	0.15	3.8	0.15	3.8	0.15
Reduced incidence of RSI	4.6	0.18	9.2	0.36	9.2	0.36
Savings related to more efficient classification processes/decisions	2.7	0.10	2.7	0.10	2.7	0.10
Reduction in staff turnover	4.1	0.16	4.1	0.16	4.1	0.16
Job redesign efficiencies	22.1	0.86	30.6	1.18	30.6	1.18
Rationalisation of unnecessary layering of management/supervision levels	1.5	0.06	3.0	0.12	4.5	0.17
Increased use of part-time employment	2.0	0.08	2.0	0.08	2.0	0.08
Total of above benefits	**69.9**	**2.71**	**87.4**	**3.38**	**88.9**	**3.44**
Machinery of government staff savings falling within the restructuring and efficiency principle and brought to account as a residual component	33.5	1.29	16.0	0.62	14.5	0.56
Total Benefits	**103.4**	**4.00**	**103.4**	**4.0**	**103.4**	**4.0**

Source: Submission by Department of Industrial Relations to Australian Conciliation and Arbitration Commission, November 1987.

Notes: (1) Agreement was ultimately reached that the benefits from the Machinery of Government staff savings, which properly fell with the Restructuring and Efficiency Principle, could be brought into the calculations for the office restructuring exercise, but only as a residual component and after every effort had been made to obtain the maximum benefit from the introduction of the new structure.

(2) The government had decided that the measures to be taken to offset the cost of the wage increases were to be realisable in the ordinary budget context. The required savings were to be net of the efficiency dividend which had been announced by the Prime Minister in September 1986 (and subsequently increased), they were to be net of any savings already forecast by Departments to justify capital outlays on new technology and they were to exclude any program savings resulting from the changes (whether these were reduced outlays or increases in revenue).

(3) Estimates of the benefits from the new classification structure were developed in eight agencies, which covered 70 per cent of all the APS staff affected by the restructuring.

Appendix 2: Agency Progress Summary

Department/Agency	Original Agency Included in Case to ACAC	Number of ASO Staff Employed	% of Positions that had Already Undergone Job Redesign*	Projected Completion Date	Comments
Administrative Services		5129	46%	December 1990	Delayed due to restructuring/commercialisation priority
Arts, Sport, the Environment, Tourism, and Territories		730	85%	April 1990	
ACT Government Service		3457	60%	July 1990	Most agencies should be completed by March 1990
Attorney General's		2300	75%	June 1990	
Community Services and Health		3870	98%	March 1990	
Defence	Yes	11283	32%	June 1990	
Employment, Education and Training	Yes	10010	80%	June 1990	
Finance		819	74%	February 1990	
Foreign Affairs and Trade	Yes	2246	52% across Central/State Offices	June 1990	Overseas Posts to be completed by mid-1990
Immigration, Local Government and Ethnic Affairs		2051	43%	June 1990	Bulk of job redesign was expected to be completed by June 1990, with remaining areas in Central Office and overseas posts to be completed after this date
Industrial Relations		702	100%	December 1989	Awaiting formal ratification from Steering Committee
Industry, Technology and Commerce		739	58%	May 1990	
Primary Industries and Energy		1850	78%	February 1990	

Appendix 2 (cont.)

Department/Agency	Original Agency Included in Case to ACAC	Number of ASO Staff Employed	% of Positions that had Already Undergone Job Redesign*	Projected Completion Date	Comments
Prime Minister and Cabinet		469	78%	March 1990	Associated Committee meetings may extend into April
Social Security	Yes	15840	83%	June 1990	–
Transport and Communications		1700	67%	Early 1990	Task to be substantially completed by end March 1990
Treasury		430	100%	December 1989	–
Veterans' Affairs	Yes	5000	50%	March 1990	–
Australian Bureau of Statistics	Yes	3482	54%	July 1991	Process linked with other major review initiatives
Australian Customs Service	Yes	1400	99%	March 1990	–
Australian Taxation Office	Yes	17800	90%	Early 1990	–

Summary:

70% of all ASO staff employed in Agencies covered in this report had been subject to the job redesign process.

Note:

- Includes positions that have actually gone through the job redesign process. It includes specifically: staff who had already moved to approved redesigned positions; staff who were currently undertaking specific skills training identified in the job redesign process prior to moving to approved redesigned positions; and other staff awaiting Steering Committee approval at that time to proceed with recommended job redesign changes.

REFERENCES

Australian Bureau of Statistics 1993. *Training and Education Experience Survey*, ABS, Canberra, Catalogue No. 6278.0.

Australian Bureau of Statistics 1995. *Innovation in Industry, 1993-94*, ABS, Canberra, Catalogue No. 8117.0.

Australian Conciliation and Arbitration Commission 1987a. Print H0368, dated 17 December 1987 (the Decision).

Australian Conciliation and Arbitration Commission 1987b. Agreement Between ACOA, APSA, FCU (TOB) and the Government on 4 % Second Tier Pay Increases for Office Based and Related Classifications.

Australian Manufacturing Council 1994. *Wealth of Ideas*, Australian Manufacturing Council, Melbourne.

Australian Manufacturing Council 1995. *The Innovation Cycle*, Australian Manufacturing Council, Melbourne.

Australian National Training Authority 1994. *Towards a Skilled Australia: A National Strategy for Vocational Education and Training*, Australian National Training Authority, Brisbane.

Business Council of Australia 1993. *Managing the Innovating Enterprise*, The Business Library, Melbourne.

Department of Industrial Relations 1990. *Administrative Service Officer Structure: Second Report Back to the Industrial Relations Commission*, Department of Industrial Relations, Canberra.

Dodgson, Mark and Rothwell, Roy (eds.) 1994. *The Handbook of Industrial Innovation*, Edward Elgar, Aldershot.

Drake, K. 1995. "The Economics of Learning on the Job: A European Perspective on Instruction-Led and Experience-Led Job Competence", paper delivered at the Conference on Efficiency and Equity in Education Policy, 6-7 September, Research School of Social Sciences, Australian National University, Canberra.

Ergas, J. and Wright, M. 1994. "Internationalisation, Firm Conduct and Productivity", in P. Lowe and J. Dwyer (eds.), *International Integration of the Australian Economy*, Reserve Bank of Australia, Sydney.

Fallick, L. 1989. "Classification Reform, Broadbanding, Multiskilling and Job Enrichment: A Union Perspective", in D.C. Corbett, C. Selby Smith and R.F.I. Smith (eds.), *Public Sector Personnel Policies for the 1990's*, Public Sector Management Institute, Monash University, Melbourne.

Freeman, C. 1994. "The Economics of Technical Change", *Cambridge Journal of Economics*, 18(5), 463-514.

Garvin, D.A. 1993. "Building a Learning Organisation", *Harvard Business Review*, July-August.

Industry Commission 1995. *Research and Development*, AGPS, Canberra.

Johnson, Bjorn and Gregersen, Birgitte 1995. "Systems of Innovation and Economic Integration", Proceedings of International Symposium 'Innovation Networks: East Meets West', Industrial Relations Research Centre, University of New South Wales, Sydney.

Lundvall, B.-Å. (ed.) 1992. *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*, Pinter, London.

McKinsey and Company 1992. *Unlocking Innovation: Challenging Conventional Wisdom About What Leaders Do*, McKinsey and Company Australia, Melbourne.

Nelson, Richard R. (ed.) 1993. *National Innovation Systems: A Comparative Analysis*, Oxford University Press, Oxford.

OECD 1992. *Technology and the Economy: The Key Relationships*, OECD, Paris.

OECD 1993. *The Measurement of Scientific and Technical Activities 'Frascati Manual'*, OECD, Paris.

Pavitt, K. 1994. "Key Characteristics of Large Innovating Firms", in Dodgson, Mark and Rothwell, Roy (eds.), *The Handbook of Industrial Innovation*, Edward Elgar, Aldershot.

Selby Smith, C. 1989. "Restructuring Office Work in the Australian Public Service", in D. C. Corbett, C. Selby Smith and R. F. I. Smith (eds.), *Public Sector Personnel Policies for the 1990's*, Public Sector Management Institute, Monash University, Melbourne.

Task Force on Management Improvement 1992. *The Australian Public Service Reformed: An Evaluation of a Decade of Management Reform*, AGPS, Canberra.

BRINGING MANAGEMENT EDUCATION TO THE WORKFORCE

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The growing awareness in Australia of the importance of continuing professional development will have an impact over the next few years in terms of its relevance also to the vocational education and training sector. Just as professional level employees are embracing the concept of continuous learning, so too will the more vocationally trained members of the workforce and particularly those in or aspiring to reach frontline manager positions.

As it is widely acknowledged that 85% of learning occurs "on-the-job" and only 15% occurs within the formal classroom environment, it can also be expected that, just as with professional level employees, a major component of the skills/competencies development of other sectors of the workforce will have a strong on-the-job focus.

These concepts are of course consistent with the notion of the "learning organisation" which is seen as the model for organisations of the future - organisations which promote and facilitate continuous learning by their employees and who see that process as providing their competitive advantage within an increasingly competitive business environment.

The notions referred to above were all factors acknowledged in the recent report of the Industry Task Force on Leadership and Management Skills (Karpin Task Force) in its wide ranging report on leadership and management skills in Australia. The *Karpin Report*, through its research program, identified what is characterised as the "most effective management development practices". These practices were identified as follows:

Table 1: Most Effective Management Development Practices

Development Practice	% of Participants
Job rotation	53%
External providers – including business schools	50%
Mentoring and coaching	42%
On-the-job experience	36%
"Action learning" programs	36%
Job assignments	35%
In-house training and development programs	24%
Work with other organisations	12%

The interesting feature about these practices is the very strong and consistent theme of them being primarily enterprise focussed. In this respect, the practices in Australia are consistent with what the Task Force found to be best practice internationally. Where Australia however is at odds with best practice internationally is in relation to our penchant for relying on programs offered by external business schools as the basis for much of Australia's management development programs. The Task Force report drew attention to international best practice as involving the use of external business schools in the customising of programs to suit the needs of the enterprise. This practice thus provides the basis for a much closer relationship between industry and the business schools and results in a customer driven, rather than a supply driven approach. Just as the Task Force identified the reliance of Australian businesses on external business schools for management development, it also found that a similar approach existed in relation to programs offered through the vocational education and training system in Australia. Thus a major challenge for that system is to ensure that its programs, both management and technical, are relevant to the needs of the customer and are customised to meet the specific needs of the customer.

A relevant example of a program which has been developed exclusively with the customer in mind has been the very successful MBA (Technology Management) program offered jointly by the Association of Professional Engineers, Scientists and Managers, Australia (APESMA) and Deakin University. This program was developed as a result of a survey amongst professional engineers which indicated that while approximately 25% of enrolments in MBA programs comprise professional engineers, when converted to a participation rate of the profession, only 2% of the profession was actually undertaking formal management studies. This led to APESMA surveying its members to ascertain why such a small proportion of professionally qualified people, who would normally see a management career as part of their career path, participated in formal management studies. The results of the survey highlighted the shortcomings of the existing university system in terms of delivering continuing professional development. The survey found that engineers were interested in undertaking management studies, but were deterred from doing so for the following reasons:

- they had doubts as to the relevance of traditional MBA studies to the roles as engineering managers;
- they were concerned at the prospect of not being able to complete a course due to work/family pressures;
- they saw the use of two 13 week semesters meaning that effectively only half the calendar year was available to undertake a program; and
- they considered that the travel time to and from lectures, and the attendance at lectures, was generally wasted time.

In the light of these findings, the Association developed a program which would address the shortcomings as perceived by professional engineers. The result was a fully distance education MBA (Technology Management) program. The proportion of engineers studying formal management education programs has increased from 2% in the mid-1980's to 15% in 1995 and the APESMA/Deakin University program has a 23% market share of MBA students in Australia.

This model for delivery of management education in a manner which is accessible to otherwise disenfranchised professional engineers, is undoubtedly one which could be used more widely in Australia, particularly as a means of providing accessible continuing professional/vocational development for the workforce at large.

The APESMA program is predicated on a desire by professionals to acquire management related skills to assist them in broadening their own career prospects and opportunities. It is also based on the notion that mature people, who are paying for their own education, will make a rational decision to select a program which most suits their needs and which represents good value for their financial investment.

The delivery of the APESMA/Deakin University MBA (Technology Management) program sits comfortably with the findings of the Industry Task Force on Leadership and Management Skills in terms of its capacity to have relevance to on-the-job experience.

The Task Force was mindful of the need to maximise this relationship when it developed its recommendations in relation to the frontline manager. As a precursor to the development of these recommendations the Task Force sought to identify the characteristics of the typical frontline manager and borrowed a methodology used by the Boston Consulting Group in their report for the Task Force on the Australian Manager of the 21st Century. The Boston Consulting Group work focussed on the senior manager profile, while the Task Force adapted this approach for the frontline manager. The adaptation resulted in the following profile of the frontline manager.

Table 2: The Emerging Frontline Manager Profile

1970	Today	2010
'The Supervisor'	**'The Organiser'**	**'The Leader/Coach'**
• Male	• Male, possibly female in sales	• Male or female
• Supervisor from position of accepted authority	• Conflict in role between management's need for supervision and group needs for leadership	• Clear role as leader and coach. Responsible for developing employee skills
• Operates in a highly hierarchical organisational structure	• Major changes in organisation structure (elimination of middle management)	• Flat organisational structure. Team Leader reports to senior management
• Values of role: Control, Organising, Motivation by Authority, Technical Expert	• Values of role: Control, Organising, Motivation by promoting teamwork	• Values of role: Performance Management, Facilitator, Participative, Empowers other team members
• Low pressure work environment	• Stressful environment due to organisational restructuring	• Environment emphasises best practice, benchmarking, quality and customer service
• Experienced in field, with trade qualifications	• Experienced in field, with trade qualification	• Most have TAFE level qualifications or degree
• Little formal management training	• 50% have formal management training for the position, but little support from management for further learning	• 100% have formal training for the position. Regular in-company training for further learning

The Task Force research in relation to the training of frontline managers revealed that in Australia approximately 50% of frontline managers have no formal training for the roles and responsibilities which they undertake. This led the Task Force to recommend a major national initiative for frontline managers. The details of this initiative are described in the report of the Industry Task Force as follows:

- an estimated total number of 180,000 frontline managers in Australia are without formal management training. It is estimated that approximately 80,000 to 100,000 of these will qualify by working in quality committed enterprises. The target is to provide access to management training for 80,000 over a five year time frame or in an early stage of its operation;
- participants will not have had any formal management training and will be working in enterprises which are able to demonstrate the application of quality principles in their operations and their human resource development processes;
- participants to be released, at cost of employer, for up to 20 days structured training spread over a 20 to 40 week period. Approximately 10 curriculum units would be involved in the course;
- training to be funded by the Commonwealth in a manner which allows the enterprise to select the provider which most suits its requirements;
- delivery, preferably on site, via a variety of mechanisms. Open and distance learning course materials to be provided;
- course materials to be based on work already undertaken by the Australian Committee for Training Curriculum and to be competency based. Initially the materials will be print based, but with funding proposed to make them available on electronic and CD Rom format;
- TAFE will be a major deliverer of the program and will be supplemented by industry associations and private providers. Implementation of Recommendation 4, upgrading of TAFE's capacity to deliver management development courses, is critical to the success of this proposal;
- the program is to be called the "National Certificate in Workplace Leadership" and would be integrated into the national qualifications framework to ensure articulation with other programs; and
- proposed funding includes provision for the deliverer to customise their program to meet enterprise requirements and to undertake assessment of competence.

As a result of the emphasis in the Karpin Report on the need to upgrade the skills of frontline managers, and also the level of enquiries received by APESMA from companies as to whether the Association could develop a program for frontline managers, such a program has been developed. This program, which has been accredited within the vocational education and training system, will be offered on a face-to-face/in-house basis in enterprises and, in addition, will be available on a distance learning basis to individuals who wish to acquire skills relevant to the frontline manager role.

The distance education program will be offered jointly by the Association, which has recently become a registered provider within the VET system, and the Australian Manufacturing Workers' Union (AMWU). The AMWU believes that there will be a significant level of demand from their members to acquire skills relevant to the frontline manager role. The Certificate in Frontline Management will be launched in February 1996, with the first intake in March 1996.

The involvement of the AMWU in the delivery of a national program for frontline managers reflects a likely development for other unions, who can be expected to see the need to broaden their offerings to meet the needs of their members.

Such developments will have a significant impact on the vocational education and training system as it will mean that, just as APESMA has been successful in offering an MBA (Technology Management) to professional engineers and scientists, industry based unions will have a very large catchment of potential students for any programs which they offer. Overall such developments will mean that Australia's workforce at all levels will have access to high quality relevant continuing education programs, which undoubtedly will have a significant impact on the competitiveness of Australian enterprises.

INDUSTRIAL RELATIONS AND VOCATIONAL EDUCATION AND TRAINING IN AUSTRALIA

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Introduction

The Conference provides an important opportunity to address this subject and to establish a better understanding of the links between the industrial relations system and the training system. In recent years, through what has been commonly referred to as the National Training Reform Agenda, there has been considerable debate surrounding this relationship and its changing nature. Amongst some employer groups the reform process in the VET sector is seen as too closely linked with industrial relations considerations but, as I hope to show, this relationship represents no radical shift from the past. What has altered is the form and that is a reflection of the change process impacting on both of these systems within the broader climate of economic change.

This paper is based on four key assertions.[2]

- Historically, there has been a strong interconnection between industrial relations and vocational education and training in Australia, manifested by both Wage Fixation processes and the apprenticeship system.
- This interface is as important today as it has been in the past.
- During the last decade there has been a substantial change in the structure of the relationship precipitated by significant reforms in both vocational education and industrial relations as a response to economic restructuring.
- Finally whilst this change process is far from complete, it is clear that the policies of the Coalition government may recast the relationship yet again into new directions, but to what degree and in which form is yet to become clear.

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1 Jane Carnegie was previously employed by the Australian Council of Trade Unions. This presentation reflects the views of the author and should not be interpreted as a representation of the position held by either her current or previous employer. The author would like to thank both DEETYA and DIR for providing information and data which have substantially contributed to this paper.

2 This paper has been updated since the conference and contains some additional material on Enterprise Bargaining Developments and a brief consideration of the Policy implications of the new Federal government.

1. The Historical Nexus

To understand the way industrial relations and training intersect in today's environment it is necessary to understand the historical nexus which can be traced back to the very beginnings of Australia's industrial relations system when the Federal Conciliation and Arbitration Act came into operation in 1901. This Act provided a centralised, institutional framework for the resolution of industrial conflict and the establishment of legal minima through awards which governed the wages and conditions of work across industries.

A major component of that institutional framework has been the utilisation of a number of wage concepts to underpin wage fixation. The first and longest standing was the Basic Wage and Margins concept which lasted from 1907 – 1966.

This concept was first articulated by Justice Higgins in the Harvester Judgement of 1907[3] and Higgins (1915). Underpinning that judgement was a set of principles which included the following precepts:

- The basic wage must secure to the employee enough wherewith to renew his strength and to maintaining his home from day to day.
- The secondary wages is remuneration for any exceptional gifts or qualifications, not the individual employee, but gifts or qualifications necessary for the performance of the functions, eg., skills as a tradesman, exceptional heart and physique, as in the case of a gas stoker, exceptional muscular training and power, as in the case of a shearer, exceptional responsibility eg., for human life, as in the case of winding or locomotive engine-drivers.
- The secondary wages, as far as possible, preserves the old margin between the unskilled labourer and the employee of the skilled or exceptional class.
- The minimum rate must be based on the highest function that the employee may be called on to exercise. The employer must not give a plumber labourer's work and pay him labourer's wages if he has also to do plumbing.

This concept, with its separate margin for skills or qualifications, established the basis for all wage decisions for over a quarter of a century.

Four factors have influenced the general approach to the fixation of margins:

- the need to encourage workers to acquire skills (see J. Higgins in *Builders' Labourers Case* (1913) 7 C.A.R. 210).
- the need to ensure that workers exercising skill and responsibility maintained their status above unskilled and semi-skilled workers (see C.J. Detheridge in a *Merchant Service Case* (1928) 27 C.A.R. 482 at 496).
- the need to maintain comparative wage justice between workers exercising similar skills or responsibilities in the same industry or different industries (see *Metal Trades Case* (1947) 58 C.A.R. 1088).
- the need to ensure that the remuneration for the exercise of a particular skill matched the value of that skill (see J. Gallagher in the 1966-67 *Metal Trades Work Value case* (1967) 121 C.A.R. 587).

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3 The Harvester Judgement – see ex parte H.V. McKay (1907), 2, C.A.R. 1 and J. Higgins (1915), "A New Province for Law and Order", *Harvard Law Review*, November.

The means for establishing this margin for skill and the higher rates of pay which followed was the employment and training system known as apprenticeship. It was through apprenticeship that a young person could obtain the recognition and status of having a trade or craft which was recognised as the benchmark of a skilled worker.

The apprenticeship system commenced operation before the turn of the century, but the common structure of an indenture and other regulation prescribing the conditions of employment for an apprentice came into effect at approximately the same time the industrial relations framework of conciliation and arbitration was being established. These arrangements for apprenticeship were set out by statute in each State/Territory[4] and were reflected in many industrial awards.

In 1967 the wages system of basic and secondary wages was recast with the establishment of the Total Wage Concept which combined these two components into a single wage level struck against a particular classification in an award. However, this change did not undermine the concept of higher reward for particular skills and qualifications. Rather the recognition of higher skill and qualification became embedded in the wage paid for the classification or by separate payment for skill through particular allowances. Apprenticeship remained the route to obtaining the status of a skilled worker.

The next major change in wage fixation was wage indexation which operated over two distinct periods of 1975-1981 and 1983-1987 broken by a brief wage freeze under the Fraser government. Whilst the primary focus of wage indexation was to increase wages in accord with changes in the cost of living, the Wage Fixation Principles governing indexation enabled the industrial parties to pursue additional wage increases based on work value ie., "changes in the nature of the work performed, skill and responsibilities required".[5] In effect the system maintained the status quo in relation to relativities for skill between classifications and awards established through the previous two wages systems, but it also enabled the industrial parties to amend those margins where changed circumstances could be identified. Principle 7(a) remains a continuing part of the Wage Fixing Principles.

The concept of relating wage increases to increasing skill and responsibility became even more important with the development of the approaches to wage fixation which followed indexation, namely the Two Tier wage systems, the Structural Efficiency Principle (SEP) and the current system of Enterprise Bargaining.

These more recent concepts will be examined in greater detail in the next section. The intent of providing this quick overview is to demonstrate the historical basis to the current relationship and its importance as a separate and fundamental component of the wage setting process, albeit for a narrow class of worker with trade status.

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4 See, for example, the *NSW Apprentices Act 1901* which contained provisions setting out age limitations, indenture arrangements, responsible persons, hours of work, dispute resolution procedures and so on.

5 Refer National Wage Case – Minimum Wage and National Wage Case April 1975 at P20 – Principle 7(a), Print No. C2200.

2. The Current Nexus – Economic and Structural Reform

From the late 1980s both the industrial relations system and the education and training system have undergone a paradigm shift which has equally impacted on the nature of their interrelationship. This paradigm shift has occurred in response to economic restructuring and the need to become world competitive. The approach generated in the Labor period of office to meeting the demands of structural economic change was to focus on upgrading the skill and knowledge base of the Australian workforce and to open up the labour market through measured industrial reform.

This approach can be described as learning centred rather than cost cutting. It is outlined by Marshall and Tucker:

> *The future now belongs to societies that organise themselves for learning. More than ever before, nations that want high incomes and full employment must develop policies that emphasise the acquisition of knowledge and skills by everyone, not just a select few ..... the key to productivity and competitiveness is the skills of our people and our capacity to use highly educated and trained people to maximum advantage in the workplace* (Prologue, pp. xiii and xvi).

This perspective was reinforced in a recent report by EPAC on investment and growth:

> *Recent empirical work has shown that investment in human capital ie education and training, is at least as important to the growth process as investment in physical capital.*

Throughout the Labor decade of office, education and training underwent massive change in a deliberate strategy to meet this economic need, changing the identification of higher education from being a resource for a minority to a right expected by the majority. The reform process and substantial resourcing of Vocational Education and Training by the Commonwealth complemented the restructuring of university education, providing a base to expand and improve the nation's skills.

Reform measures in the industrial relations system were undertaken in conjunction, paving the way to create a workplace culture and structure which would enable these more highly skilled and knowledgeable workers to utilise their capacities to maximum advantage. Industrial relations moved beyond representing a one dimensional approach directed towards regulating industrial conflict to a multi-faceted approach, which incorporated a much wider agenda of social and economic change which had impact on the employment relationship. This broader definition of industrial relations has been described by Deery and Plowman (1991, p.3) as *"the behaviour and interaction of people at work ..... that shape the employment relationship between management and labour"*.

These developments established a new dimension to the historical relationship based on a broader and more widely overlapping scope. The nature of this new structural relationship has been identified by Storey and Sissan (1994) in the context of the UK experience in the following terms:

> *"Although human resource management and industrial relations employ different perspectives to examine employment relations the subject matter overlaps. If, for example, training has been seen as the province of human resource management, it is because it has been defined in an area of management decision and prerogative. Yet, public policies on training from apprenticeship to new industry training initiatives are tripartite, with government, union and employer representatives involved. In the eighties training became a prominent part of the industrial relations agenda. The traditional divides are not immutable, but shift as organisational strategies and industrial goals are rethought and recast."*

In the Australian context, this shift was supported to an even greater degree due to the strong relationship between the Federal government and the labour movement which, in turn, influenced both the direction of reform and its implementation.

3. The National Policy Environment

A hallmark of the decade of Federal Labor Government was the extensive use of tripartite bodies and forums involving employer, union and government representatives to establish new and continuing policy in a variety of portfolio areas. Such an approach was particularly important in both the industrial relations and vocational education and training policy environments, reflecting a growing convergence between these two areas. It was also a reflection and recognition by the industrial parties (i.e. the unions and employer bodies) that influencing the outcome of government decision making through tripartism has a direct spinoff in supporting the interests of the individuals they respectively represent.

4. Setting Industrial Relations Policy

A central focus during this period was the broadening in the definition of industrial relations to include a range of measures which, in combination, would extend the concept of a living wage beyond the direct wage set in industrial negotiation. These measures included the transfer payments by government to individuals through education, health and welfare expenditures (known as "the social wage") and an agreed focus on employment growth. The vehicle for this broader industrial dimension was the Federal Labor Government's Agreement with the ACTU known as the Prices and Income Accord which commenced in 1983 to provide a framework for sustainable economic growth and wages outcomes.

During Labor's term of office eight separate Accords were signed each with a separate package of agreed measures. The last of these, Accord Mark VIII, contained the following objectives:

- a net increase of 600,000 jobs between 1995 and 1999;
- a reduction in the unemployment rate to 5% by 2000/2001;
- an underlying inflation rate of 2-3%;
- a fair and effective industrial relations system;
- improved superannuation;
- a dynamic labour market;
- work and family measures;
- the social wage; and
- worker protections.

The fourth objective, 'a fair and effective industrial relations system' outlined a continuation of the policy directions set in train which have *"progressively transformed the system with the direct parties ... employers, workers and their unions ... now taking increasing responsibility for their own industrial relations outcomes. ..... Under the Accord, industrial relations has and will continue to play its part in delivering key economic, industrial and social objectives ..... The parties view collective arrangements as the most fair and efficient approach as distinct from other systems aimed at*

denuding the bargaining capacity of workers and which fail in developing a co-operative and productive culture".[6]

The detailed objectives to be met under the heading "Dynamic Labour Market" involved a continuing commitment to the reform of Australia's vocational education and training system with an emphasis on an expansion of structured training, additional opportunities for lower skilled workers/women/existing employees and nationally recognised competency based qualifications. Reform to youth and training wages was another key objective focussing on access to the National Training Wage, the replacement of age based wage structures with competency based wage structures and supportive wage arrangements to introduce the Australian Vocational Training System.[7]

The reform process referred to in vocational education and training commenced in 1988/89 in response to significant macroeconomic change and the realisation that Australia's existing and potential workforce needed to be highly skilled to meet the demands of structural change and an industry base confronted with increasing world competition. The approach to reform focussed on establishing a nationally orientated, industry driven, competency based vocational education and training system. Collectively, this reform process became known as the National Training Reform Agenda.

5. The Focus of Reform – Industrial Relations

In the industrial relations arena the two key developments to underpin labour market flexibility, skill development and structural change have been Award Restructuring and Enterprise Bargaining.

5.1 Award Restructuring

Award restructuring was introduced in 1988 in the National Wage Case as a new Principle within the Wage Fixation Principles called Structural Efficiency (SEP).[8] The objective of the Principle was to provide a mechanism which would encourage modernisation of Australia's award system of industrial regulation to meet the demands of the changing economy. SEP focussed on modernising the classification and pay structures in awards to create broader structures which reflected the nature of the industry's work, emphasised multi-skilling, established new skill related career paths and focussed on skill acquisition and recognition. This process of redefinition was accompanied by new pay structures reflecting the skill levels established. Other related changes in awards introduced through award restructuring included provisions on work organisation and redesign, greater flexibility in working arrangements and the concept of a productive culture.

Two examples of the impact of award restructuring on the award system were the changes made to the Federal Metals Industry Award and the States based clerical awards (utilising the Victorian State Clerks Award as the test case).

In the metals industry, the federal award classification structure was overhauled, transforming a structure of over 300 narrow task based classifications each with a specific pay level into a banded classification structure of 14 broadly based skill levels divided into three career streams. This award structure was specifically linked to a reformed competency based training structure designed and

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6 The Prices and Incomes Accord Mark VIII Agreement 1995-1999, *"Sustaining Growth, Low Inflation and Fairness"*, ACTU, 1995 p.2-3.

7 *Ibid*, p.11.

8 National Wage Case, August 1988, Print H 4000.

developed to underpin the operation of the new more flexible multi-skilled award levels within the industry.

In the clerical sector, the impact of award restructuring was not a broadbanding exercise, but its converse, providing the impetus for the first genuine work value test of clerical skill. The outcome was the transformation of clerical classification structures from a one dimensional outmoded machine based identification of pay to one determined by a multi-faceted skill base approach which doubled the career pay structure within the award to six levels and identified the third level as the nexus point with the trade level in the metals award. Like metals, the clerical sector developed a specific set of competency standards which would provide the basis for establishing a training structure to complement the new award structure; unlike metals the relationship between the competency standards development process and the industrial determination process was of complementation rather than combination.

Both of these awards formed part of a group of five awards nominated by the ACTU known as the *ACTU Blueprint for Award Restructuring*. The *Blueprint* was a wages strategy which aimed to set properly determined and appropriate wage relativities for all awards based on the interrelationships between these five awards based on their inter-skill and intra-skill levels.

5.2 Enterprise Bargaining

The introduction of enterprise bargaining as a key component of the industrial relations and wage setting system in 1991 modified the strategy of the ACTU away from the highly centralised approach of the *Blueprint* towards a more open, enterprise orientated system. The model of enterprise bargaining supported in the Federal industrial system built on the base of award restructuring and was identified as the next logical step towards developing a more productive culture.

The content areas of these agreements were outlined in the revised Wage Fixation Guidelines[9] and included the capacity for wage increases based on:

- work organisational change (multi-skilling, new classification structures, teamwork, quality assurance systems, continuous improvement/best practice strategies),
- new technology,
- new training opportunities,
- performance appraisal systems, and
- new shiftwork/revised leave provisions.

6. The Focus of Reform – Education and Training

In the vocational education and training arena an equally profound transformation of the system was initiated both in direct response to the industrial reform process and as a consequence of the broader strategic economic imperatives of structural change. In large part, Australia's training system mirrored the work structures of the past. The training it delivered reflected a workforce which was hierarchically bound and narrowly focussed, with limited scope for skills acquisition to all but a few who had access to 'trades' based education. Such a system could not possibly provide the access or outcomes which the new economic paradigm demanded.

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9 National Wage Case, October 1991, Print K 0300.

As identified earlier in the paper, the core elements of this reform process have focussed on developing a systemic transformation of the training system so that it is:

- industry led;
- national in scope;
- competency based;
- more accessible; and
- with flexible pathways to recognition.

This paper cannot provide a detailed overview on each of these points, but an understanding of the concept of an industry led/competency based approach is critical to understanding the paradigm shift which has occurred in the relationship between industrial relations and training.

The industry led nature of the training reform process, particularly in the development of national competency standards, has shifted the control of training outcomes away from training providers and educationalists into the hands of the key industrial parties.

This 'industrial' control over defining the outcomes – as reflected in the workbased competency standards – has lent a new direct industrial presence to these processes which previously never existed. National competency standards are defined as specifying the knowledge and skill required in employment. They are:

- developed by the industry parties;
- based upon the structure of work within a particular industry; and
- expressed in workplace outcomes.

The approach of enabling the industrial parties, if they so desire, to reflect the competency standards in an industrial context through awards or Enterprise Bargaining Agreements has also brought a new meaning to the industrial relations/training nexus by directly combining the two, so that training specifications become part of the legal apparatus of industrial regulation.

This has led to a concern by some employer bodies of a wages outcome established through this vehicle which was regarded as undesirable. Such concern led to a reconsideration of some aspects of the national training reform process by these employer bodies.

In 1994 the key industrial parties representing all major employer groups and the ACTU[10] forged an agreement to ensure these concerns did not undermine the substantial commitment by the industrial parties to the training reform agenda. The joint statement on "Training Reform Agenda and Industrial Relations" provided that:

> *"The parties recognise and accept that to the extent that education and training increases the skills of employees and those skills are utilised in workplaces the value of the employee to the employer can increase. This factor, amongst others, is relevant for consideration in the determination of wage levels at industry or enterprise level. The*

[10] These bodies meet together in an industry forum known as the Joint Industry Training Council (JITEC) to develop a strategic industry response to matters arising from and in connection with training reform. The statement on industrial relations and training reform was an important vehicle in managing this issue.

parties also recognise that employees seek nationally recognised qualifications in part to improve their future employment and career prospects ..... The reforms to the training system are being undertaken to provide appropriate skill to meet present and future needs of Australian workplaces".[11]

The statement went on to address these points in further detail, identifying agreement between the parties and acceptance of the capacity for specific industries or enterprises to reflect competency standards in classifications of restructured awards or enterprise agreements, but also agreement that such relationships did not *"establish a linkage for wage or classification purposes in areas covered by different competency standards or with a different occupation or classification in other industries or enterprises".*[12]

7. The Outcomes of Reform

This section briefly outlines how these reform processes have been reflected in the instruments of industrial regulation in specific industries and enterprises – through awards, enterprise agreements and in structured entry level training and employment.

7.1 The Award Stream

Many Federal and State awards now have provisions detailing structures for training within their industries which refer to the national training arrangements. Two key awards were finalised in 1995 setting out specific arrangements for their respective industries.

In the metals industry referred to earlier, the reform process initiated through award restructuring was continued through the development of reformed training arrangements and the establishment of national competency standards which were subsequently set out in the award. On July 3 1995, a Full Bench of the Australian Industrial Relations Commission (AIRC) approved the implementation of the national competency standards under the metal industry award, effective from July 1 1995.[13] The standards provide a vehicle which enables the implementation of the restructured award with its broadbanded classification structure. A senior official of the Australian Manufacturing Workers' Union (AMWU) recently explained the rationale for linking the standards and classification structure together as being:

"The key reason why standards have been able to be linked to the classification and career structure in the metal industry award is that they are very flexible. The standards can be packaged in a very large variety of ways to suit the particular enterprise and job. Only a few simple rules restrict packaging. This provides the basis for a much more multi-skilled workforce and for a great deal of workplace change.... We consider that a classification structure based on skills is essential to reform in the workplace, to recognise and make fullest use of employees' skills".

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11 *Ibid*

12 *Ibid*

13 Metal Industry Award Decision of the Full Bench of the AIRC, 3 July 1995, Dec 1433/95 S, Print M2963.

In the building industry, the AIRC finalised the award restructuring process for that industry by varying the national building and construction industry award to include a new classification structure emphasising skill formation. The decision represented the culmination of four years of negotiations and has established a broad based skills based classification structure with appropriate relativities for wages based on the skill level of the employee. The decision will facilitate further reform in related awards.[14]

7.2. Enterprise Bargaining – Training Provisions in Registered Agreements

Whilst a number of key awards were the subject of ongoing reform, by far the largest concentration of industrial activity in the past year (1995) has been generated through enterprise bargaining. In terms of content, training is the third most cited area of inclusion within registered Federal Agreements after new technology and work organisation (DIR 1994, p 372).

The significance of training as an aspect of enterprise bargaining is evidenced by the number of registered agreements which contain training provisions. An analysis of all agreements has been undertaken by the Department of Industrial Relations for DEETYA based on information collected under the formalised Federal workplace agreements database.[15] Tables 1 and 2 provide a snapshot and comparison of the provisions relating to training contained in enterprise agreements registered in 1994 and 1995. As Table 1 shows there has been a consistent proportion of agreements with training provisions over the two years, with 64% identifying training in some form in 1995 compared with 67% in 1994. This proportion needs to be considered against the backdrop of a 143% increase in the overall number of agreements registered in 1995 over 1994 (with 3314 agreements made during 1995).

Public administration continued to include more provisions related to training than any other sector over both years. The most common provision across all industries was the inclusion of a competency based classification structures, with 35% of all agreements in 1995 containing this provision. The descriptor General Training Arrangements followed in terms of numbers involved at 29%. Included in this category were provisions for training consultative committees, training plans and assessment in the workplace. There was no equivalent descriptor in 1994.

Competency standards presented another new descriptor in 1995, showing up in 14% of all agreements. The highest incidence was in Electrical, Gas, Water, Construction, Transportation, Storage and Communications at 21%, followed by Metals at 18% the and non-Metals Manufacturing at 12%. Within this category, 61% adopted national competency standards with a further 36% utilising internal industry standards.

Significantly, the analysis by DIR shows very little difference in the incidence of training provisions within agreements based on size of the workplace, with some 63% of workplaces numbering less than 20 employees adopting some form of training provision, compared with 66% for workplaces with both 50-99 and 100-199 employees and 61% for workplaces with over 500 employees. Given the often cited view that developing a training culture in small business is more difficult than in a large well organised enterprise, these findings may demonstrate otherwise, particularly if training is linked to an industrial agreement.

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14 National Building and Construction Award and Other Awards, Decision by the Full Bench of the AIRC, 8 September 1995 Dec/2014/95 M Print M4984.

15 Final Report to the Department of Employment, Education Training and Youth Affairs, Report No. 4, June 1996.

Table 1: Training Provisions in Certified Agreements of the AIRC

Training Provisions	Proportion of Part VIB Agreements	
	(%) 1994	(%) 1995
Entry-level training	6	8
General training	n/a	29
Skill-competency-based classification structure	26	35
Competency standards	n/a	14
Training leave	29	13
How training is provided	n/a	13
Training for broader tasks	27	18
Any indicator	67	64

Source: Formalised Federal Workplace Agreements Database – analysis by DIR Policy Development Division

Table 2: Incidence of Training Provisions in Certified Agreements of the AIRC, by Industry Group

Industry Group	Incidence in Enterprise Agreements	
	(%) 1994	(%) 1995
Mining and agriculture	53	62
Metals manufacturing	71	73
Non-metals manufacturing	67	63
Infrastructure services (electricity/gas/water)	66	71
Government administration and defence	86	78
Personal, community and financial services	50	39
All industries	67	64

Source: Formalised Federal Workplace Agreements Database – analysis by DIR Policy Development Division

The expected outcomes of introducing these and other changes through enterprise bargaining was an improvement in productivity, which in turn formed the basis for wage increases across most agreements.

An assessment of the productivity gains (expected and achieved) for agreements made in 1994 showed that productivity increases were highest amongst agreements registered under Part VI B of the Industrial Relations Act, at 59% for achieved productivity and 54% for expected productivity – compared with 30% and 17% respectively in unregistered workplace agreements (DIR 1994, p.170). Significantly, changes in employee skill levels represented the next highest reason given for wage increases provided through enterprise bargaining. This mirrored the important focus of training and skill development as a central part of the change process introduced through enterprise bargaining.

Whilst training and skill development was cited as a reason in its own right for wage increases, it also represents a major contributing factor to productivity gain as identified by managers in the workplace bargaining survey. Over 44% of managers' Part VI B workplaces stated that staff training and development contributed to productivity improvement (DIR 1994, pp. 176-177).

The DIR report's assessment of the effects of agreements on productivity was that:

> *Across all workplaces with agreements, managers were likely to say that productivity had improved as a result of focussing on changes to work or management practices or through an increased flexibility of employees to perform a variety of jobs or tasks. It would appear that the industrial relations agenda which emerged in the 1980s through instruments such as the Structural Efficiency Principle continued to provide the basis for changes in work techniques leading to productivity improvements. ..... Likewise staff development and training was a major element in productivity improvement in workplaces with agreements* (DIR 1994).

The data collected by DIR demonstrates the significance of training and training related structures to enterprise bargaining, the increasing importance of specific training provisions which relate to the National Training Reform Agenda and the direct linkage between training, productivity increases and wages outcomes.

7.3. Structured Entry Level Training Arrangements

As Table 1 shows, the level of activity relating to entry level training has not been significant in enterprise bargaining, with only a minor percentage increase of 2% in 1995 over 1994 to 8% of agreements containing a provision on entry level training.

The reason for this stems not from lack of interest in entry level arrangements, but is a reflection of the state of development in the reform arrangements relating to this area and the fact that where major reform has occurred it has been established through the awards system.

Much work to reform entry level training has taken place at the national policy level where the key focus has been the Australian Vocational Training System (AVTS) and through the development of National Traineeships. The election policy of the new Government identifies that this area is set to become the centrepiece of continuing reform in the VET sector through the development of the Modern Australian Apprenticeship and Traineeship System (MAATS).

This brief overview establishes that, in this arena too, there is a very strong interconnection between the training system and industrial relations, reflecting not only the patterns of the past but the needs of a modern entry level training system.

7.4. The Australian Vocational Training System (AVTS)

The AVTS represented a central plank of the reform package generated under the Federal Labor Government, linked directly to other key elements such as competency based training. It began in 1992 as a seminal report (the Carmichael Report) presented by one of the government's tripartite bodies – the Employment and Skills Formation Council – which called for a substantial reform of the existing entry level system to meet the demand for higher skills and improved vocational pathways of structured training for school leavers not entering higher education. The objective of the AVTS was to provide a new comprehensive, national framework of articulated, competency based training pathways embracing apprenticeships, traineeships, labour market programs, vocational education in schools, VET courses and workforce training leading to Australian Qualification Framework Certificate 1-4 qualifications.

A complementary and critical component of developing the AVTS has been the reform of industrial relations arrangements. These reforms focus on both the workplace pathway in the AVTS and the institution pathway.

In the work based pathway, work and training are to be combined to enable a trainee or apprentice to earn an income which is based on competencies achieved rather than time served (i.e. based on the increasing work value of the trainee as measured by achievement of competencies). The development of this principle constitutes a major reform, which ensures these arrangements relate to the broader reform process in training and industrial relations.

In the institutional pathway, the training arrangements are to be based on a mixture of structured learning in an educational institution with unpaid work experience (generally limited to 240 hours).

7.5. Junior Rates Case

The vehicle to establish the award based industrial arrangements for the AVTS has been the AIRC's Junior Rates Case. Initial guideline work was prepared via a tripartite working party and an agreed position was put forward to the AIRC in December 1995 for endorsement, which provided a set of AVTS guidelines for trainees and apprentices. These guidelines established the basis for the introduction of competency based wages and a framework to guide longer term reform of non-trainee wages.

The guidelines established, at section 5.2, the basis for traineeship and apprenticeship wages in the following terms:

> *The parties should establish a rate of pay for each point in the trainee classification structure expressed as a percentage of the relevant mainstream classification. The rates of pay should reflect the relative value of the competencies demonstrated on the job over the period of the training arrangement. Trainee wages should therefore:*
>
> *(i) establish appropriate relativities which take account of work value/skill evaluation;*
>
> *(ii) reflect any need for younger workers to mature in work orientation and experience in order to achieve full competency; and*
>
> *(iii) be equitable to trainees, whilst ensuring they are competitive in the labour market by reflecting cost/benefits to employers of providing training.*

Wage rates should take into account time spent in accredited training by reflecting any effects it has on the productive value of the trainee.[16]

The AIRC's decision provided the industrial parties with a comprehensive base from which to move forward with further reform. Work is currently "on hold" whilst the parties await passage of the Coalition's industrial legislation and the proposals for reform to the AVTS through the development of the Modern Australian Apprenticeship and Traineeship System (MAATS).

7.6. The National Training Wage

Another concurrent development which impacted on training wages during Labor's term of office was the National Training Wage, which was introduced in 1994 to assist the implementation of national traineeships developed as part of *Working Nation*. The National Training Wage represented an interim wages device which established the principle of a simple skill based trainee wages structure. Three skill levels were established, corresponding to a trades, semiskilled and base skills level. The approach was approved by a Full Bench of the AIRC through a multi-industry National Training Wage Award on 5 September 1994; and flowed to other Federal and State based awards and systems progressively throughout 1995.[17]

Whilst serving its specific purpose of supporting the capacity for industries to develop new traineeships, the National Training Wage, in its structure, did not reflect the paradigm shift of other initiatives and, in some ways, was a step backwards. However, there was an urgent need at the time to provide a national approach. The subsequent agreement on the AVTS Guidelines should mean that the competency model will prevail in the longer term, although this is now dependent on the approach to entry level wages adopted by the new Federal Government.

8. Conclusions

In summary, this overview clearly demonstrates that at both a systemic and specific industry and enterprise level there has been a major change in the way that training and industrial relations intersect, driven by the reform processes of each system, the economic imperatives driving those reform processes and the approach to managing the reforms through the Labor years of office.

The change of Government may herald yet another stage of evolution as it puts in place a new approach to reform, particularly in industrial relations through the *Workplace Relations and Other Legislation Amendment Bill* and in entry level arrangements through the Modern Australian Apprenticeship and Traineeship System. Both of these initiatives represent a major conceptual shift in the structure and definition of employee relations to a system based on individual contracts operated through Australian workplace agreements.

At the time of finalising this paper – just before the Federal Budget of August 1996 and before the new government's policy parameters have taken effect in either industrial relations or training – it is too early to tell what the impact will be on the nature of the nexus between industrial relations and VET established under Labor. Given the reforms proposed, it is suggested that both the parameters and the outcomes of the interrelationship will change substantially.

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16 Guidelines for Trainee Wage Arrangements for the Australian Vocational Training System (AVTS).

17 National Training Wage Decision, 5 September 1994, Print L 5188.

References

Deery, S J. and Plowman, D H. 1991. *Australian Industrial Relations*, 3rd ed., McGraw-Hill, Sydney.

Department of Industrial Relations (DIR) 1994. *Enterprise Bargaining in Australia – Developments under the Industrial Relations Reform Act*, DIR Annual Report 1994, Australian Government Publishing Service, Canberra.

Marshall, R. and Tucker, M. 1992. *Thinking for a Living*, Basic Books.

Storey, J. and Sissan, K. 1994. *Managing Human Resources and Industrial Relations*, Open University Press.

ENTERPRISE BARGAINING, INDUSTRIAL RELATIONS AND TRAINING REFORMS IN AUSTRALIA

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Introduction

Over the last decade skill formation has been a sustained focus of debates over economic and public policy in Australia. Recognising the deficiencies of existing arrangements, the federal Labor Government (1983-95) attempted to improve the quality and quantity of skill formation directly through its Training Reform Agenda and indirectly through reforms to industrial relations. In the industrial relations arena, it was envisaged that the development of enterprise bargaining would encourage skill formation at the workplace.

While the benefits of training are acknowledged by employers and employer associations, employees and unions, and governments, little is known about the nature and extent of the training arrangements implemented within the framework of enterprise bargaining. Accordingly, this paper addressed the following questions:

- the extent of training provisions in enterprise bargaining agreements and changes in those provisions since the inception of enterprise bargaining;
- a demographic profile of persons covered by agreements with training provisions; and
- the quality of training provisions included in agreements and whether these differ across industries.

In examining these issues we draw on the following major sources: *Workplace Bargaining. The First 1000 Agreements* (DIR 1993); *Enterprise Bargaining in Australia, 1994* (DIR 1995) and *Labor International Network/National Key Centre in Industrial Relations* (LIN/NKCIR) *Database*. The analysis of this data is augmented by direct reference to agreements registered under sections 134C or 170MA of the Industrial Relations Act with the Australian Industrial Relations Commission (AIRC). Some agreements have expired and others had been removed from the AIRC library. These missing cases only represented 3.7 percent of enterprise agreements without a training provision and 2.3 percent of cases with a training provision. In view of the small number of missing cases the effect on any conclusions is minimal.

[1] We are indebted to George Proimos for his assistance in researching this paper. The authors take responsibility for all errors and omissions.

1. Enterprise Bargaining and Training

1.1 The Emergence of Enterprise Bargaining

Arguably, the principal assumption behind the shift toward workplace bargaining has been that an enterprise approach will result in the establishment of forms of work organisation and employment conditions that will meet the needs of the enterprise and its employees. 'Enterprises will be more efficient and competitive; employees will have more rewarding jobs' (Fells 1995, p.218). This assumption was first reflected in a series of national wage case decisions beginning in 1987 and then by a series of amendments to the *Industrial Relations Act 1988*, especially the *Industrial Relations Reform Act 1993*. The latter, in effect, made compulsory conciliation and arbitration subordinate to enterprise bargaining and accordingly awards were to become the underpinning (safety net) for agreements.

The Restructuring and Efficiency Principle (REP) ,or 'two tier' wage fixing system, as it was commonly known, established the focus on workplace bargaining for wage outcomes based on workplace productivity improvements and major changes in award provisions (Print G6400). The major types of changes introduced under REP were:

- payment systems, performance related pay and incremental pay;
- flexible labour utilisation through broadbanding, multiskilling and removal of demarcations;
- industrial relations procedures, including dispute settlement and consultation;
- working time arrangements, including greater spread of hours, reduction in non-productive time, and new shift and overtime arrangements; and
- management practices and quality control.

The most common forms of changes introduced related to work practices, working times and dispute settlement procedures (Macklin et al 1992, p.31). A survey of 2,204 managers identified 11 categories of changes resulting from the operation of the Restructuring and Efficiency Principle. Significantly, 30 percent of workplaces had introduced new career paths and 25 percent had introduced formal training where none previously existed, though these changes were more likely to have been implemented in public sector workplaces (DIR 1991, p.199). There was widespread dissatisfaction with the operation of the REP, however, and in union circles a perception that its major consequence was to induce a negative cost cutting approach.

The Structural Efficiency Principle (SEP), or award restructuring, sought to 'build on the steps already taken to encourage greater productivity and efficiency'. In its 1988 decision introducing the SEP, the Australian Conciliation and Arbitration Commission (ACAC) drew attention to the need to address 'fundamental and institutional elements' that inhibited greater productivity and efficiency at the workplace (ACAC Print H4000, p.5). These included the need to:

> establish skill-related career paths which provide incentive for workers to continue to participate in skill formation, and
>
> eliminate impediments to multi-skilling and broaden the range of tasks which a worker may be required to perform.

Responding to the views of the major participants in the national wage case, the federal Government and peak employer and union bodies, the ACAC emphasised that a 'more highly skilled and flexible labour force is required to assist in structural adjustment but also to provide workers with access to more varied, fulfilling and better paid jobs' (ACAC Print H4000, p.6). For present purposes it is

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significant that the Structural Efficiency Principle established 'a link where none had existed before between awards, workplace change, pay and skills' (NBEET 1991, p.34).

At the level of individual awards, the SEP achieved some valuable changes, including the provision for increased multiskilling of workers, removal of demarcation barriers, and establishment of career paths and more flexible working time arrangements (EPAC 1993, p.22). But there was only a limited adoption of comprehensive enterprise based agreements in place of multi-employer awards.

For the federal Government, improving the skills of the nation's workforce was critical to Australia's international competitiveness. Increasing the quality, depth and flexibility of labour market skills would facilitate adjustment to changing economic, social and technological pressures and make possible long term sustained economic growth. In essence, the Government sought to promote a long term strategic approach to training and skill formation at the enterprise level. Moreover, in the context of enterprise bargaining, the newly forged link between industrial relations and training could assist in making the connections with corporate strategy and provide a means of embedding training within an integrated program of change (NBEET 1991, p.60).

Responding to the combined urgings of the federal Government, major employer groups and the ACTU, the ACAC implemented the Enterprise Bargaining Principle in October 1991. In so doing, the tribunal hoped to accelerate the rate of workplace change and 'put the onus on the direct parties to negotiate genuine arrangements tailored to their particular circumstance' (EPAC 1993, p.24).

1.2 Enterprise Bargaining and Productivity

While policy developments proceeded on the basis that enterprise bargaining was a major avenue for increasing productivity at the workplace, this assumption has been questioned. As Rimmer and Isaac (1993, p.8) observe: 'the period 1987 to the present is not distinguished by improved labour productivity that can be attributed to national policies based on enterprise bargaining'. Aggregate workplace productivity measures are influenced by many factors which are changing simultaneously so as to confound any effort to calculate the productivity gains attributable to enterprise bargaining. In addition, it is difficult to quantify workplace reform that is 'implemented in stages, directed at slow change areas, dependant on attitude change and must often overcome resistance from many quarters' (Rimmer and Watts 1994, p.75).

Even if it is accepted that training may make a significant contribution to productivity improvement, the macroeconomic climate of the early 1990s was antagonistic to the espoused principles and policies of developing a more highly skilled workforce. In a deepening recession employers were unable or reluctant to invest in training to develop a 'smarter' workforce and retrenchments and cost minimisation strategies undermined progressive workplace reform (Rimmer and Isaac 1993, p.6). While there may have been some expectation that training as an 'investment' would continue as a counter cyclical activity, the severity of the economic downturn, the lack of funds and subsequent downsizing eroded efforts to maintain and build on training initiatives.

1.3 Training Reform Agenda

In addition to fostering labour market reform through enterprise bargaining, the Government intervened in other key policy areas such as employment, education and training, and industry policy. Reports such as *Labour Market Reform: The Industrial Relations Agenda* (1988); *Award Restructuring: The Task Ahead* (1989); *Improving Australia's Training System* (1989); and *Industry Training in Australia: The Need for Change* (1989) outlined the Government's broad agenda and pointed to the inadequacy of the national training effort. In particular, the inability of the training system to produce the type and quality of skills needed and the disincentives for individuals to undertake and for

employers to provide training were targeted. The package of measures adopted to achieve this end were labelled the Training Reform Agenda. Broadly these reforms entailed:

- moving toward a national approach to vocational education and training,
- development and recognition of competency standards,
- increasing the role of industry in articulating training needs and in the delivery of training,
- improving skills recognition by refocussing from time served to the outcomes of training,
- changes to the training delivery system; and
- enhancing access to training for disadvantaged groups (Teicher 1995, p.105).

More generally, the Training Reform Agenda sought to create and strengthen the linkages between the vocational education and training system, workplace reform and improved industry competitiveness, while continuing to acknowledge the Government's commitment to social justice and equity.

An important manifestation of this approach was the introduction of the Training Guarantee Levy, which initially required employers with payrolls in excess of $200,000 to spend one percent of payroll on 'structured training' or pay an equivalent taxation levy. It had mixed results. The Training Guarantee Levy represented an attempt to force changes in the quantitative and qualitative provision of training by industry and enterprises. Prominent among the objectives of the Training Guarantee Levy was to foster a more strategic approach to training decisions, but also to improve the access of women and minorities to training and promotion opportunities (Teicher 1995, p.106). In the face of sustained criticism, by employers and industry representatives, the Training Guarantee Levy was suspended in 1994 and the Coalition Government elected in March 1996 has no intention of resuming this program.

2. Studies of Enterprise Bargaining and Training

The extent and consequences of enterprise bargaining have been studied using surveys and case studies beginning with the Workplace Bargaining Survey. None of this research has training and its consequences as the primary focus.

2.1 Workplace Bargaining Survey

Undertaken in 1992, the Workplace Bargaining Survey (WBS) involved interviews with managers at 700 workplaces employing 20 or more people and a series of case studies. The survey found 'that the chief factors providing the impetus for workplace bargaining consisted of external product market and policy pressures on the one hand and an internal recognition of the need for change on the other' (Short et al 1993, p.11). Preliminary findings from the WBS case studies indicated that 'management had been critical in setting the agenda, level and outcomes of bargaining' (Short et al 1993, p.ix).

For present purposes it is significant that training loomed large in both registered and unregistered agreements, with 59 percent of workplaces having introduced multiskilling for some employees and 38 percent initiating major new training programs as part of workplace reform. Of those workplaces with ratified agreements negotiated at the workplace, 81 percent had introduced multiskilling of some employees and 54 percent had introduced major new training programs. Sixty-seven percent of workplaces reported higher productivity, while 79 percent reported the workforce received no collectively negotiated wage increases (Short et al 1993, p.18).

2.2 First 1000 Agreements

The issue of workplace productivity improvement and the progress made under workplace bargaining was examined in a Department of Industrial Relations study of the first 1000 federal agreements ratified by the Australian Industrial Relations Commission after the introduction of the Enterprise Bargaining Principle. The agreements covered around 760,000 employees, an estimated 36 percent of wage and salary earners covered by federal awards or 11.5 percent of all wage and salary earners (DIR 1993, p lx).

Agreements were found to have overcome barriers to improved productivity by redesigning jobs and reorganising work to broaden responsibilities and removing restrictive work practices and demarcation barriers. Changes to work organisation had indirect implications for skill formation: for example adopting team work, quality assurance techniques, continuous improvement and introducing new classification structures (DIR 1993). Many of the provisions for changes designed to improve productivity acknowledge the role of training and the importance of skills without addressing these issues specifically. Changes identified that made mention of training or skills included the introduction of team work, the adoption of quality assurance techniques and the introduction of new classifications structures. Assigning responsibility for a broader range of tasks has encouraged training in new skills with such a provision included in 27 percent of agreements (Curtain 1994b, p.17).

Brief comments on provisions dealing with skill formation as an implication of work reorganisation are set out below:

- Some agreements established cellular work groups which devolved responsibility for production, quality improvement and flexibility to broadly skilled work teams. Teams were responsible for a wider range of functions, including planning, organising, directing and controlling and received training in problem solving techniques and team concepts.
- The adoption of quality assurance techniques to meet externally accredited quality standards and introduction of continuous improvement and best practice programs highlighted the need to provide employees with the skills and training necessary to deliver the expected quality, undertake problem solving and implement solutions.
- Provision for new classification structures opened the possibility of career paths based on national competency standards and the acquisition of skills. That such provisions were not widespread is evident from a survey of agreements made in the period ended April 1994 which found references to skill or competency based job structures in 32 percent of agreements (Curtain 1994b, p.17).

While many agreements dealt with training as an implication of change, training also was addressed directly in agreements. The *First 1000 Agreements* outlined initiatives that firms had adopted to improve the productivity and efficiency of the workforce. These included: establishing skills related career paths, conducting skills audits, developing classification structures based on competence, linking remuneration to skills acquired or used, recognition of prior learning, portability of skills, access by employees to training and providing payment for training leave (DIR 1993, p.40). A shortcoming of this study was that it provided no indication of the extent of training provisions, but later studies including our own attempt to address this issue.

According to Curtain (1994b, p.17) 60 percent of agreements registered to April 1994 made some mention of training, though, as the Department of Industrial Relations noted in its first annual report on enterprise bargaining, the level of detail included in provisions varied considerably (DIR 1995, p.153). In this sample, 54 percent of agreements included a commitment by the employer to provide training. Of the enterprise agreements which refer to training, 27 percent provide more detail and 16 percent provide what are described as comprehensive training arrangements (Curtain 1994b, p.21). The generality of training provisions is confirmed by a more recent study drawing on the ADAM data base

of federal and state registered and unregistered agreements. It found that most commonly training provisions were general statements of intent about the future implementation of training in the organisation (ACCIRT 1995, p.16). Typically, agreements failed to provide details on how training practices were to change or the resources to be devoted to training employees.

The *First 1000 Agreements* provides a discussion of specific training measures included in agreements. These findings are summarised below and are amplified by more recent results.

(i) **Skills Audits and Analyses:** The development of training strategies and plans may involve the conduct of a skills audit or skills analysis. In 1993, it was reported that skills audits were provided for in the majority of agreements containing training provisions (DIR 1993, p.42). A more recent study, however, found that only 9 percent of agreements have provisions for skills analyses and 7 percent provide for skills audits (ACCIRT 1995, p.14).

(ii) **Competency Standards:** The existence of national competency standards developed by industry training bodies encouraged some enterprises to adopt these standards when implementing training programs or to implement enterprise specific training consistent with the standards (DIR 1993, 48). An unspecified number of agreements provided that all training should be accredited and portable, while others affirmed the need to ensure accreditation and certification would meet industry standards (DIR 1993, p.48 and p.51). Curtain (1994b) found that 28 percent of all enterprise agreements contained a commitment or reference linking training to national competency standards. By contrast, 57 percent of a 10 percent sample of the 1,089 agreements identified by DIR as making some reference to training made an explicit commitment to the use of industry standards and 31 percent had an explicit enterprise focus in the conduct of training (Curtain 1994b, p.18).

(iii) **Training and Remuneration**: Some agreements link remuneration to skills acquired or used (DIR 1993, p.47). Curtain (1994a, p.15) cautions against tight linkages between training arrangements and skills acquisition and wages:

> If there is a direct short-term relationship, the result will be training provisions and skills acquisition out of kilter with the actual and potential needs of the workplace.

(iv) **Training Committees:** It was reported that many agreements used training committees to identify training needs and priorities and identify employees to participate in training. A more recent analysis of a representative sample of agreements concluded in the period ended April 1994, found that 23 percent specified a joint consultative mechanism in relation to training issues and 43 percent of agreements in the metal industry which referred to training had an undertaking to consult with their workforce on training issues (Curtain 1994b, p.5).

2.3 The Enterprise Bargaining Report

This report draws on two main sources, the Formalised Federal Workplace Agreements Database (WAD) and the Workplace Bargaining Survey 1994 (WBS 1994), a national survey of managers in 1,060 workplaces with 10 or more employees (excluding agriculture and defence) and 11,233 employees conducted in October and November 1994. Of these agreements, 67 percent addressed the issue of training.

Table 1 categorises the training provisions included in agreements with the most frequently occurring provisions being in relation to training leave (29 percent) and training for broader tasks (26 percent). In relation to the latter category, the report simply states 'some' were based on industry, enterprise or nationally accredited competency standards, but there is no indication of the numbers of agreements or employees covered (DIR 1995, p.154). Coincidentally, this is the same proportion recorded by the ADAM data base which includes registered and unregistered agreements from the federal level and three states (ACCIRT 1995, p.13).

Table 1: Training Provisions in Part VIB Agreements, 1994 (n=1,360)

Training Provisions	Proportion of Agreements (percent)
Entry- Level Training	6
Skill/Competency Based Classification Structure	26
Training Leave	29
Training for Broader Tasks	27
Any Indicator	67

Table 2 provides a useful counterpoint to the data on agreement provisions in Table 1 as it records employee responses to questions on training opportunities and training provided to different categories of employees in workplaces with varying types of agreements. Focusing on Part VIB agreements, that is, federal certified agreements and enterprise flexibility agreements, more than half of all male, female, part time, full time, and Non-English speaking background (NESB) employees had the opportunity to undertake training, but less than 10 percent received training in basic skills. Female employees were more likely to have training opportunities than males (65 percent compared to 49 percent). Part time employees appear to have been as likely as full time employees to have training opportunities (56 percent compared to 54 percent). NESB employees may have fared less well, with 50 percent reporting training opportunities. These results are similar for workplaces without agreements, except in relation to part time employees where the proportion is much lower (8 percent compared to 2 percent). Full time and male employees covered by state agreements also were more likely to receive training in basic skills than employees covered by Part VIB agreements. More generally, the disparities between provision of training opportunities and receipt of basic skills training across the various categories (including no agreements), suggests the need for closer investigation of the links between workplace change, enterprise bargaining and training.

Table 3 builds on Table 2 by comparing training opportunity provisions in agreements with measures of work intensity (range of tasks performed) and utilisation of skills. While more than half of the workplaces with federal agreements provided training opportunities, 66 percent of employees reported that their skills were not being fully utilised, an indication that the implementation of job redesign may have fallen far behind that projected in agreements made in 1994. Similarly, 64 percent of employees reported increased work intensity, suggesting that typically the idea of 'working smarter' may amount to little more than a slogan.

Table 2: Training and Training Opportunities by Category of Employee and Type of Agreement, 1994

	Type of Workplace Agreement				
Change in the Workplace (a)	Part VIB	Other Federal Formal	State formal	Unregistered	No Agreement
	(%)	(%)	(%)	(%)	(%)
All Employees					
Training Opportunities	54	50	53	49	45
Training in basic skills	6	8	10	10	6
Male Employees					
Training Opportunities	49	54	54	51	45
Training in basic skills	6	9	13	13	7
Female Employees					
Training Opportunities	65	43	52	47	45
Training in basic skills	7	7	7	7	5
Part Time Employees					
Training Opportunities	56	42	49	46	31
Training in basic skills	8	2	4	11	2
Full-Time Employees					
Training Opportunities	54	52	53	50	50
Training in basic skills	6	10	12	10	7
NESB Employees					
Training Opportunities	50	46	75	44	39
Training in basic skills	9	2	3	17	7

Notes:

(a) Source: "Changes in the Workplace in the Previous 12 months Which have Affected Employees". Adapted from Supplementary Tables 15a, 15b, 15c and 15d in DIR (1995) *Enterprise Bargaining in Australia: 1994 Annual Report*, AGPS, Canberra

(b) Source: Major issues covered by agreements, by workplace type. Adapted from Table 4.19 in DIR (1995) *Enterprise Bargaining in Australia: 1994 Annual Report*, AGPS, Canberra

Table 3: Training and Workplace Changes

Type of Workplace Change (a)	Part VIB Workplaces %	Non-VIB Agreement Workplaces %	No Recent Agreement Workplaces %
New training opportunities	54	51	45
Language and literacy training	6	10	6
Range of tasks performed in job			
Higher	64	67	65
No change	32	30	30
Lower	5	3	5
Ability to use skills to full extent (b)			
Higher	34	35	36
No change	45	48	47
Lower	21	17	17

(a) **Source**: Adapted from Table 5.4, "Changes in the Workplace in the Previous 12 Months Which Have Affected Employees", DIR (1995) *Enterprise Bargaining in Australia: 1994 Annual Report*, AGPS, Canberra.

(b) **Source**: Adapted from Table 5.14, "Change in Job Characteristics Over the Previous 12 Months, by Workplace Type", DIR (1995) *Enterprise Bargaining in Australia: 1994 Annual Report*, AGPS, Canberra.

3. The Nature and Extent of Training Provisions

3.1 ACTU-NKCIR Data Base

In order to gain greater insights into training provisions in agreements the Labour Information Network and National Key Centre in Industrial Relations (LIN/NKCIR) Agreements database was used as a starting point.

The LIN/NKCIR agreements database contains 2,052 entries, one for each agreement. Agreements cover the period from September 1991 until the end of 1994. These agreements were established under either the *Industrial Relations Act 1988* (Cth), or, after March 1993, following amendments made pursuant to the *Industrial Relations Reform Act 1993* (Cth). Each entry contains demographic data related to the particular agreement including numbers of employees covered, union involved and gender coverage. The database is used to link agreements which contain a training provision to the demographic data in order to identify patterns or characteristics behind the presence or absence of training provisions in enterprise agreements.

As the database in its original form was not coded for training, a list of agreements provided by the Australian Industrial Registry was utilised. All agreements under either section 134C or section 170MA of the *Industrial Relations Act* were examined to determine whether there was a reference to training. This sub set was chosen because it comprised approximately 70 percent of agreements listed in the data base (1,296 of the 2,052), and represents the most commonly utilised form of federal enterprise bargaining agreements. A small number of agreements could not be found, because the copy had been stolen or temporarily removed. Despite these limitations and that some agreements are successors to earlier agreements (with the same demographic characteristics) the large numbers of agreements and employees covered suggest that findings derived from the data base are reliable.

Table 4 compares the number and coverage of agreements with and without references to training according to the type of agreement. Of those agreements which included a reference to training, most (546) were single employer (multi or single union). A similar finding emerges from those agreements which did not contain a reference to training. Table 5 provides a further indication of the small number of multi-employer agreements and the small number of employees covered by such agreements. This Table also highlights the fact that, not only do more agreements contain training provisions, but these agreements cover nearly twice as many employees: 691,683 compared to 374,274 employees.

Table 4: Federal Enterprise Agreements and Numbers of Employees Covered by Presence of Training Provisions and Type of Settlement: September 1991 to December 1994 (n=1425)

Type	Agreements With a Training Provision		Agreements Without a Training Provision	
	Number of Agreements	Number of Employees	Number of Agreements	Number of Employees
Multi union – single employer	225	411,760	192	171,040
Multi union – multi employer	2	60	4	4,426
Individual settlement	–	–	1	18
Single union - multi employer	3	7	4	16
Single union – single employer	321	189,311	268	126,958
Unknown	247	70,545	157	71,816
Total	**798**	**671,683**	**626**	**374,274**

Table 5: Federal Enterprise Agreements and Numbers of Employees Covered by Presence of Training Provisions and the Number of Employers: September 1991 to December 1994 (n=1425)

	Agreements With a Training Provision		Agreements Without a Training Provision	
Number of Employers	Number of Agreements	Number of Employees	Number of Agreements	Number of Employees
Unknown	325	99,120	226	123,850
0	2	12	–	–
1	465	572,324	394	254,982
2	2	160	–	–
3	2	60	1	16
4	–	–	1	582
5	2	7	–	–
6	–	–	2	3,844
7	–	–	–	–
8	–	–	1	–
10	–	–	1	–
Total	**798**	**671,683**	**626**	**374,274**

The connection between the relative proportions of male and female employees and the presence of training provisions in agreements is the focus of Table 6. For simplicity, workplaces with a female coverage of 0-40 percent were classified as male dominated, 41-50 percent coverage as male mixed, 51-60 percent coverage as female mixed, and 61-100 percent as female dominated. This Table indicates that male dominated workplaces are more likely to have an agreement containing a training clause, and cover more employees than female dominated workplaces. Because of the disparity between male and female participation rates and the incidence of part-time and casual employment, it is not clear whether females are under represented in either category of agreements.

An industry breakdown of agreements is provided in Table 7. The Electricity, Gas and Water Supply Industry group accounts for 44.5 percent of agreements with a training provision and for 9.2 percent of all employees covered by such a provision. By contrast the Cultural and Recreation Services Industry accounts for 18.5 percent of agreements and 41 percent of employees covered by a training provision. Aggregating the Communication, and Cultural and Recreational Service Industries, accounts for 32.5 percent of agreements and 75.6 percent of all employees covered by agreements with training provisions. The largest number of agreements without a provision for training were in Electricity, Gas and Water Supply (356), although the largest number of employees covered by agreements without a training provision were in the Transport and Storage Industries (236,000). The absence of training provisions in the Transport and Storage industry agreements reflect the generally low level of training activity which is characteristic of this industry group.

Table 6: Federal Enterprise Agreements and Numbers of Employees Covered by Presence of Training Provisions and Gender: September 1991 to December 1994 (n=1425)

	Agreements with a Training Provision		Agreements without a Training Provision	
Percentage of Females in Workplace	Number of Agreements	Number of Employees	Number of Agreements	Number of Employees
Unknown	288	1,227	267	3,897
0	149	9,953	110	10,400
1 - 10	103	52,624	71	36,194
11 - 20	56	25,652	36	73,299
21 - 30	36	222,610	27	141,120
31 - 40	36	18,936	30	27,037
41 - 50	47	204,585	36	15,051
51 - 60	31	71,031	21	58,038
61 - 70	24	40,946	9	4,440
71 - 80	14	17,296	8	1,178
81 - 90	7	6,058	6	1,245
91 - 100	7	765	5	2,375
Total	798	671,683	626	374,274

A cross tabulation of training provisions and provisions covering part-time employees is presented in Table 8. In agreements with a training provision, references to part-time employees were two and a half times more likely to be contained in the parent award than in the agreement. Interestingly, while a similar number of agreements with and without training provisions make reference to part time employees the actual numbers of workers covered is vastly different, 547,000 compared to 93,000. This suggests that part-time employees are likely to have access to training either through existing agreements or parent awards.

In those agreements with a training provision, references to casual employees were approximately 30 percent more likely to be contained in the parent award than in the agreement. While a similar number of agreements with and without training provisions make reference to casual employees, the actual numbers of workers covered is vastly different, 545,000 compared to 91,000. This leads to a similar conclusion to that in relation to Table 8, i.e. that part time employees are likely to have access to training either through the existing agreement or the parent award.

Table 7: Federal Enterprise Agreements and Numbers of Employees Covered by Presence of Training Provisions and Industry: September 1991 to December 1994 (n=1425)

Industry	Agreements with a Training Provision		Agreements without a Training Provision	
	No. of Agreements	No. of Employees	No. of Agreements	No. of Employees
Agriculture, Forestry and Fishing	–	–	–	–
Mining	11	2,421	8	325
Manufacturing	31	5,374	24	7,866
Electricity, Gas and Water Supply	356	63,488	277	18,514
Construction	21	10,273	26	22,524
Wholesale Trade	–	–	–	–
Retail Trade	55	1,876	26	2,860
Accommodation, Cafes and Restaurants	1	80	12	691
Transport and Storage	35	11,417	91	236,070
Communication Services	110	239,314	–	–
Finance and Insurance	–	–	–	–
Property and Business Services	–	–	–	–
Government Administration and Defence	10	70,650	18	38,263
Health and Community Services	–	–	–	–
Cultural and Recreational Services	148	263,879	119	43,945
Personal and Other Services	–	–	–	–
Missing	20	2,911	25	3,216
Total	**798**	**671,683**	**626**	**374,274**

Table 8: Federal Enterprise Agreements and Numbers of Employees Covered by Presence of Training Provisions and Presence of Part-time Reference in Agreement: September 1991 to December 1994 (n=1425)

	Agreements with a Training Provision		Agreements without a Training Provision	
Part-time	Number of Agreements	Number of Employees	Number of Agreements	Number of Employees
Unknown	404	125,309	304	200,136
No Clause	20	1,468	10	70,961
In Parent Award	272	267,439	257	71,500
Clause in Agreement	103	277,467	55	31,677
Total	799	671,683	626	374,274

Table 9: Federal Enterprise Agreements and Numbers of Employees Covered by Presence of Training Provisions and Presence of Casual Reference in Agreement: September 1991 to December 1994 (n=1424)

	Agreements with a Training Provision		Agreements without a Training Provision	
Casual	Number of Agreements	Number of Employees	Number of Agreements	Number of Employees
Unknown	405	125,385	304	200,136
No Clause	5	3,116	10	72,634
In Parent Award	232	276,610	234	91,579
Clause in Agreement	156	266,572	78	9,925
Total	798	671,683	626	374,274

3.2 Training Related Content of Agreements

In order to gain further insights into the links between training and enterprise bargaining, a content analysis of a subset of 52 agreements drawn from the LIN/NKCIR data base has been undertaken. Agreements that included some reference to training were examined to explore the type and nature of the provisions dealing specifically with training.

Commitment to Training: As with previous studies, there was great variation in the extent of the commitment to training. While most agreements affirmed the importance of training to enterprise performance and employee and staff development, this rarely translated into detailed and comprehensive provisions. Most agreements contained broad statements of a general commitment to training and skill formation activity. This is reflected in the extracts of training clauses set out below:

> To achieve our vision of a world class manufacturing site, the company requires all employees, management and the workforce alike to be flexible, receptive to change, multiskilled and function as a team. Appropriate training and education will be implemented to develop these skills and all employees must be willing to undertake training as needed (Print K7473).

> (The company) is committed to a training and development philosophy that will enable employees to meet job requirements and business objectives. (The company) encourages all employees to develop their skills and competencies to ensure that they are trained to meet the tasks of their current position and future roles (Print K5320).

> The parties are committed to the continual development and implementaton of structured training programs. This is consistent with the requirement for employees to acquire and utilise broader and more advanced skills so as to undertake the expanded range of functions associated with the whole of job concept (Print K4694).

In some agreements these statements marked the sum of the commitment to training, but a small number proceeded to outline the process, expectations and outcomes that were sought.

Training Program: The majority of agreements surveyed indicated a commitment to the development of a training program. Only 12 percent of agreements made reference to an existing training program. Most agreements signified the commencement of a process of developng, formulating and implementing an enterprise training program. In 31 percent of the agreements examined there was no mention of a training program nor was it possible to ascertain if such a program was in place. In most cases, the responsibility for developing a training program was assigned to the Training Committee.

The Role of the Training Committee: The establishment of a training committee charged with the development, management and implementation of a training plan or program was a feature of 44 percent of the agreements examined. If references to joint consultative processes or consultative committees is included, this figure increases to 58 percent. This indicates a general willingness to include all stakeholders, including external bodies such as Industry Training Boards, in the development of training programs. Some agreements outlined the role of the Training Commitee in detail, including composition, issues to be addressed, objectives and functions. Most agreements dealt with the role of Training Committees in broad terms.

> A Training Committee will be established to assist the Company training staff with the development of a training plan to meet the needs of the Company. The role of this Training Committee will be to recommend an appropriate plan of management for ratification and to assist training staff with ongoing coordination and monitoring of the implementation of the plan (Print L3339).

An example of a comprehensive specification of the role of the Training Committee is produced below.

> The Role of the Plant Consultative Committees in respect of training shall be:
>
> (a) To oversee and contribute to the implementation of the plant's training program.....
>
> (b) To oversee the dissemination of information on training programs and the availability of training courses and career opportunities to employees.
>
> (c) In consultation with appropriate Training or Education Authorities to monitor agreed competency standards.....
>
> (d) To recommend individual employees for training.....
>
> (e) To monitor and advise management and employees on the ongoing effectiveness of the training.
>
> (f) To review when appropriate course content..... (Print K5251)

Some Committees were responsible for the selection of participants and ensuring access to training programs, as well as hearing appeals and dispute resolution in relation to training opportunities.

Needs Identification: The agreements also were scrutinised for references to the identification of training needs. If, as indicated above, many training programs were still to be formulated and developed, enterprises could be expected to undertake a process of systematically identifying current skills and training needs. Less than half (42 percent) of the agreements referred to a process for identifying training needs. Rather, agreements tended to contain simplistic statements that training activity was to be consistent with the 'current and future needs of the company' or 'operational needs'. There was no indication of what these needs were or how they would be determined. Skills audits and training needs analyses were rarely mentioned.

Types of Training: A neglected area in most previous studies is the content and delivery of training. Not surprisingly, the agreements revealed little about the specific types of training activity proposed. References to literacy and numeracy training and areas such as quality assurance, team work and improved operational efficiency were common. Agreements specifying delivery modes included references to on-the-job, off-the-job, in-house and externally provided training. The following is typical of the content of provisions dealing with delivery:

> Training will be primarily by direct on the job work experience, self paced learning, computer based training and explanation. It may draw upon both external training resources and demonstrated in-house training expertise (Print K5251).

Competency Standards: Agreements also were examined for references to accreditation and competency standards in the provision of training. The majority of agreements (58 percent) did not refer to accreditation or competency standards, while others indicated that:

> Training will be, wherever possible, to recognised and accredited standards so that portability is achieved. However the company reserves the right to arrange training that best suits the company's needs and will work towards having such training recognised and eventually accredited (Print L2655).

Some agreements specified that training programs were to be developed in accordance with national standards and that enterprise based training should be consistent with national or industry standards. As the following extract indicates, accreditation was not a priority in most agreements:

> Training Modules will be developed at the workplace to meet National Standards. Existing accredited modules may be used. It is recognised that there is training that has to be done in order to ensure necessary job skills are adequate, but may take time to be accredited. The training of such job skills will continue to take place (Print K8464).

Training, Skills and Career Development: The extent to which training, skill formation and career progression were linked in the agreements was also considered. The need to establish and identify the nature of the linkages was commonly acknowledged, but some agreements took a cautious approach to implementation:

> The parties acknowledge that, because the competencies and skills required of the workforce are not yet known in detail, it is not practicable to prepare the skills and training matrix which will form the basis for progression along identified career paths (Print L1733).

> The parties commit themselves to examining the introduction of Competency Based Training, Assessment and Salary Advancement encompassing:
> (1) Identification of appropriate competencies for positions and the development of assessment principles and techniques and curricula within the Corporation (and) having due regard to the skill and career development needs of staff and cost implications review the ways in which competency based credentials and assessment can be integrated within the existing merit based system of promotion (Print 7648).

More commonly agreements made a general commitment to establish skill related career paths and to work towards a classification structure which rewards the utilisation of skills.

4. Conclusion

Australia's recent experience with enterprise bargaining has been infused with the objective of directly increasing enterprise efficiency and indirectly, international competitiveness. Whatever the formal objectives of enterprise bargaining, the reality has been that enterprise agreements have become the preferred route for employees to achieve improved pay and conditions. Typically, this has required employees to make concessions in order to improve productivity and reduce costs. Measures included in agreements to improve efficiency have been wide ranging, for example new technology, work organisation, training opportunities, performance appraisal, performance based pay, temporal flexibility and broadbanding. Many of these changes required training in themselves and this was sometimes reflected in enterprise agreements. More often, agreements included a training provision, for example, a commitment to training or to the establishment of a training program, consultation on training or training leave. By and large, these commitments appear to have rested on the assumption that training will enhance enterprise productivity, though the data are equivocal on whether this expectation generally has been met.

The clearest finding to emerge from the various data bases and studies of enterprise agreements is the prevalence of training provisions. Most provisions are of a general nature: for example, endorsing the importance of training or committing the organisation to embark on a training program. The general absence of detailed provisions mapping out the parameters and implementation of a training program cast doubt on whether the parties to the agreements seriously intended implementing training programs. On one view, inclusion of training provisions and ancillary references to career paths may be a concession to union negotiators. Alternatively, managers seeking to justify necessary pay rises granted in enterprise negotiations may have been able to report that training programs were being implemented to enhance productivity or improve quality.

Of some concern are consistent indications that training is not central to the enterprise bargaining process; for example Table 6 demonstrates that the majority of employees are covered by male dominated (60-100 percent) agreements, regardless of whether the agreement contains a training provision. In view of the manifest deficiencies in the quality and quantity of enterprise skill formation in Australia and the dearth of detailed training provisions in agreements, there are grounds for questioning the achievements of the Training Reform Agenda. Further cause for concern arises from evidence that there is a considerable gap between the inclusion of training provisions and the conduct of training and enhancement of productivity. This leads to two questions: whether implementation of training commitments is jettisoned when necessitated by short term cost considerations; and whether the task of implementing a training program is too long term and complex for many organisations to undertake. More fundamentally, it may be that enterprise agreements are not appropriate instruments for a detailed specification of training arrangements. Perhaps training is better addressed in awards or managed as part of the Human Resource Management function. Further research at the firm level is needed to identify the extent to which training provisions are implemented in the workplace and how this differs between organisations that have specified training arrangements in their enterprise agreements from those that have not.

References

ACCIRT 1995. Agreements Database and Monitor, No. 5, March.

Angwin, M. and McLaughlin, P. 1990. "Enterprise Bargaining", *Labour and Industry*, 3(1), 10-20.

Callus, R. et al 1991. *Industrial Relations at Work: The Australian Workplace Industrial Relations Survey*, Department of Industrial Relations, AGPS, Canberra.

Curtain, R. 1994a. "The Impact of Industrial Relations on Training", *Business Council Bulletin*, No. 109, June, 14-18.

Curtain, R. 1994b. "The Impact of Industrial Relations on Training: An Analysis of Major Private Sector Awards and Enterprise Bargaining Agreements", report prepared for the Business Council of Australia Taskforce on Training, July 1994.

Department of Industrial Relations 1995. *Enterprise Bargaining in Australia: 1994, Annual Report. Developments Under the Industrial Relations Reform Act*, AGPS, Canberra.

Department of Industrial Relations 1993. *Workplace Bargaining: The First 1000 Agreements*, AGPS, Canberra.

Department of Industrial Relations 1989. *Review of the Structural Efficiency Principle February – May 1989*, AGPS, Canberra.

378

EPAC 1992. "Issues in Enterprise Bargaining", Background Paper No. 22, December, AGPS, Canberra.

Fells, R. 1995. "Enterprise Bargaining and the Process of Negotiation: A Case Study", *Journal of Industrial Relations*, 37(3), 218-235.

Macklin, R. et al 1992. "Workplace Bargaining Structures and Processes in Australia", pp. 3-70 in D. Peetz et al. (eds.), *Workplace Bargaining in the International Context*, Department of Industrial Relations, Canberra.

Newsletter Information Services 1994. *Lessons from the First Enterprise Agreements*, Manly NSW.

National Board of Employment, Education and Training 1991. *Progress and Prospects in Improved Skills Recognition*, AGPS, Canberra.

O'Donnell, M. 1995. "Up the Garden Path? Enterprise Bargaining and Decentralisation in the NSW Public Sector", *Journal of Industrial Relations*, 37(3), 203-217.

Rimmer, M. and Isaac, J. 1993. "Directions in Labour Market Reform", National Key Centre in Industrial Relations Working Paper No 27, Monash University, Melbourne.

Rimmer, M. and Watts, L. 1994. "Enterprise Bargaining: The Truth Revealed at Last", *Economic and Labour Relations Review*, 5(1), 62-80.

Short, M. et al 1993. *The Spread and Impact of Workplace Bargaining: Evidence from the Workplace Bargaining Research Project*, AGPS, Canberra.

Teicher, J. 1995. "The Training Guarantee: A Good Ideal Gone Wrong", in F. Ferrier and C. Selby Smith (eds.), pp 105-112 in *The Economics of Education and Training 1995*, Monash University-ACER Centre for the Economics of Education and Training, AGPS, Canberra.

DEVELOPING A FUTURE RESEARCH PROGRAM

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Member of ANTA Research Advisory Council

Introduction

On the basis of the papers presented in the conference, this concluding reflection identifies a potential research program in the economics of vocational education and training. Each paper, implicitly or explicitly, proposed a research agenda, though inevitably one that reflected the relatively narrow range of issues with which the paper was concerned. The challenge that now faces economists interested in vocational education and training - and the policy makers and practitioners with whom they interact - is to build a coherent research program from the range of individual contributions that the conference has generated.

In establishing any research agenda there are three considerations. The first is the broader context within which research questions are framed and priorities identified. The second is the need to construct the research agenda in a way that makes connections between different elements. Since the number of potential research questions is virtually unlimited, but resources are finite, topics need to be grouped and linked so that the whole of the agenda is greater than the sum of its individual parts. The third is the need to give serious thought, at the outset, to ways of maximising the impact of the research program.

1. The Broader Context

Research on vocational education and training has been stimulated by the Australian National Training Authority Research Advisory Council's funding program which was initially structured into five priority areas:

- the needs of small business, with special emphasis on women;
- the needs of disadvantaged groups;
- assurance of quality in the vocational education and training sector;
- the relationship between vocational education and training and the national economy; and
- learning in the workplace.

Although the Council's priority areas for research funding will change over time, these five areas are likely to be of continuing importance to the vocational education and training sector. One of them has a clear economic focus. A useful way to think further about a research agenda on the economics of vocational education and training would be to ask whether there are any aspects of the other four priority areas to which economic analysis could make a useful contribution. For example, can innovative financing solutions be found to the problems that many small businesses face in providing training for their employees? Can economic incentives play a constructive role in fostering quality assurance in the vocational education and training sector?

Such questions remind us that these five research areas should not be rigidly compartmentalised. The Research Advisory Council would be pleased to see interaction between the Research Centres and other activities it has funded under each priority area, as this is a potentially important way of stimulating multiplier effects.

1.1 Focus of this Conference

This conference has focused on a particular subset of the questions relating to the links between vocational education and training and the national economy. The conference theme was sharply focused on the economic impact of vocational education and training. Only a few papers addressed this question directly, however, either in terms of the macro level (the role of education in fostering innovation and economic growth) or the micro-level (the role of vocational education and training in accounting for differences in individuals' earnings). The majority of papers were mainly concerned with impact in the other direction, *viz.* how do changes in employment, occupational structure, patterns of work organisation, and industrial relations affect the demand for different types of vocational education and training, and the nature of the vocational education and training that is provided.

This is not surprising since the impact is clearly a two-way process. Vocational education and training can be expected to affect the economic prospects of individuals, enterprises, and state and national economies. It is itself subject to impact by a wide variety of external forces, including economic pressures and demands. At the present time in Australia it is perhaps the first type of impact that is of most immediate concern, raising questions such as whether vocational education and training does have an economic pay-off, and whether some forms are more cost-effective than others for different groups and individuals. Such questions, which perhaps derive from a lack of self-confidence in the vocational education and training sector, are crying out for systematic and sustained research. It is important, however, not to lose sight of impacts in the other direction. Economic analysis has an important role to play in assisting those in the vocational education and training sector to better understand the changing contexts within which they operate, and the pressures to which they need to respond. The broad research agenda outlined later in the paper hopefully strikes a balance between both types of work.

1.2 Perspective of a Psychologist

From the perspective of a psychologist, one of the striking features of this conference has been the way that some of the economic models proposed have been validated. Most papers conformed to the conventional scientific process of developing a model from previous theoretical or empirical work, and then testing it against data. The models concerned were either judged to be adequately validated by the data or in need of further development. In some other cases, models were validated against either what appeared to be the researcher's intuition or against the characteristics of other models. Such instances raise doubts about the usefulness of some economists' approaches to what is essentially an applied field in which real data not models *per se* need to be better understood.

1.3 Levels of Expectation

In the early stages of establishing a research agenda, expectations often do not accord with reality. Those who fund and commission research sometimes hold expectations that are too high. Researchers are expected to have more confidence in their findings than is reasonable, or to produce more detailed results than are possible with the resources at hand. Such expectations are often reinforced by research proposals. Researchers' private views, however, are often pessimistic and their expectations about what can be achieved are too low. This can manifest itself in research work that tolerates too high a level of generality or detachment from policy and practice.

The risks of unrealistic expectations are particularly acute in an area such as the economics of vocational education and training. There has not been a strong tradition of research in this area before, and those who are starting the research generally lack detailed knowledge of the sector. There is a risk that some policy makers and practitioners will expect researchers to solve their most pressing problems, and to even serve a public relations function for the sector. The complexity and dynamism of the sector may cause some researchers to become overwhelmed or detached.

There are no easy answers to the problems posed by unrealistic expectations. The most positive strategy is for the lines of communication between policy makers, practitioners and researchers to be kept open, and thereby facilitate a process of mutual education about each other's concerns.

2. Content of a Research Agenda

Research on the economic impact of vocational education and training requires attention to at least five main issues:

- the benefits of vocational education and training;
- the role of vocational education and training in change;
- the cost effectiveness of different forms of vocational education and training;
- the content of vocational education and training; and
- the beneficiaries of vocational education and training.

2.1 Benefits of Vocational Education and Training

The benefits of VET can be identified at the individual, enterprise and societal levels.

As papers at this conference have made clear, from an individual student or worker perspective a key question is the extent to which the benefits of vocational education and training are guaranteed. Possible mechanisms for guaranteeing the benefits are through the Australian Vocational Certificate, through industrial awards that link training with career paths and higher earnings, and through enterprise bargaining. Individuals' attitudes towards vocational education and training are likely to be more positive when there are guaranteed benefits arising from their participation. The role of institutional frameworks and industrial relations in shaping individuals' demands for vocational education and training, and the nature of the benefits that individuals receive, are clearly important areas for research.

Many of the questions about individual benefits can only be satisfactorily addressed by longitudinal data on individuals as they move among formal education, training and work environments. Australia is fortunate in having two national longitudinal databases: the Australian Council for Educational Research's *Youth in Transition*, and the Commonwealth Department of Employment, Education and Training's *Australian Youth Survey*. The operations of these longitudinal databases are presently being consolidated at the Australian Council for Educational Research. A better understanding of how individuals benefit from vocational education and training would be facilitated by analyses of these data.

The enterprise can benefit from vocational education and training through a more skilled workforce and through improved industrial relations. Although there is widespread recognition of these benefits in general terms, considerably more research is needed on the particular forms of vocational education and training that are most beneficial, and how those benefits are manifested in different types of enterprises. The question of enterprise motivation is important in this regard. Why is it that certain enterprises provide extensive vocational education and training, either on-the-job or off-site, while other enterprises seem content to reap the benefits of expanded provision through public funding? The latter sort of enterprise behaviour raises the prospect that increased public funding will be used as a substitute for enterprise-based training.

The societal benefits of vocational education and training are probably the most difficult to identify and document. The benefits can be evident in workforce restructuring and enhanced international competitiveness, but such developments are shaped by a variety of factors, of which vocational education and training is only one.

2.2 Role of Vocational Education and Training in Change

There is a two-way relationship between vocational education and training and change. Vocational education and training programs and activities create change, but also respond to changes in the economy and wider society. A balanced research program will reflect this two-way relationship. The conference papers have suggested two main focal points for examining the role of vocational education and training in change:

- workforce restructuring, and
- change in enterprises.

Both of these aspects of change have macro and micro dimensions. The level of educational qualifications in the workforce is rising, part-time and casual employment is increasing, and new types of jobs are being created while others are being made obsolete. New enterprises are being developed in growing industries, while existing enterprises - in both the public and private sectors - are restructuring or going out of business. The turbulence of the macro-economic environment impinges on, and in turn is shaped by, changes at the enterprise level. These developments have been evident for some time, but the pace of change has accelerated.

Uncertainty about the direction of change reinforces the need to provide workers and would-be workers with the skills and knowledge to facilitate occupational flexibility. The concept of lifelong learning provides an organising framework for thinking about this approach. It is worth noting, however, that were learning and working to become truly integrated over the course of adult life, it would be difficult to isolate the impact of one upon the other.

Lifelong learning for all, or even for a significant part of the workforce, is clearly some way off. In the meantime, it will continue to be important to investigate the impact of vocational education and training on change in enterprises. One useful way to give this research a cutting edge would be to analyse the impact of vocational education and training in promoting innovation, considering, for example, whether some particular forms are more successful than others in promoting innovative thinking in enterprises, and in creating a climate in which innovation is recognised as an essential ingredient in enterprise success.

2.3 Cost-Effectiveness of Different Forms of Vocational Education and Training

There is great diversity in the provision of vocational education and training in Australia. The age of participants spans the full range of working life. Programs are conducted in public and private institutions in the school and tertiary sectors, with varying forms of attendance and different mixes of formal instruction and on-the-job learning. Economists clearly have an important role to play in better understanding the cost-effectiveness of different forms of provision. An important beginning would be to improve the data on the costs of provision. Cost analysis is particularly challenging in the vocational education and training environment because of the number of different groups and individuals that may be involved in any one program. This implies that, not only should the total level of costs be identified, but also how those costs are distributed among the various stakeholders involved. The same consideration applies to analysis of the benefits.

The diversity in provision raises some interesting questions. Are certain forms of vocational education and training better provided prior to joining the workforce, or concurrently with work? If the provision is prior to work, is it better for it to take place during the final years of schooling (as happens in much of continental Europe, for example) or in the post-secondary phase (as generally occurs in North America)? If it is to occur at the secondary education level, is it better to have it provided by schools or by specialist providers? Can or should school-based learning be combined with learning in the workplace? If it is better to have provision concurrent with work, is it more cost-effective to locate it in the workplace, in a training institution or in some combination of the two? Such questions are certainly sharpened when expressed in cost-effectiveness terms.

2.4 Content of Vocational Education and Training

Traditionally, economists have paid little attention to the content of educational programs. The conventional economic approach has been to focus on program inputs or program outputs and to leave analysis of content and process to others. Perhaps it is time for economists to pay more attention to the 'black box' of educational programs. At the very minimum, there are some important issues regarding the structure and focus of vocational education and training programs that would benefit from economic analysis.

One of the key questions facing program designers is the degree of specificity that programs should strive to achieve. Should programs try to develop skills and knowledge that are specific to a particular type of work or to a particular industry? To what extent should generality be sought in terms of transferable skills and the capacity to reflect on and structure one's own thinking? An important input to the continuing debate about such questions would be evidence that economists are well placed to provide on changing job requirements, labour market trends and job mobility.

Perhaps more fundamentally, some economists may be encouraged to examine program content and process as an important field of production in its own right. Economic concepts such as diminishing returns to scale, joint production and externalities have the potential to contribute to how vocational education and training program content and process could be better organised. Clearly, this is one area where collaboration between economists and researchers from other disciplines could prove fruitful.

Another important set of questions relates to which parties should determine program content. Should providers or users play the key role? Who really are the users of programs - enterprises and employers, or workers and would-be workers? To what extent should the organised representatives of employers and employees be involved in shaping program content? In some sectors these questions are already decided through agreements that have been reached on program funding and labour relations frameworks. Where agreements are in place, economists have a role to play in questioning whether the arrangements are consistent with the interests of all involved.

Where the situation is more fluid economists can help shape the debate. For example, since it is likely that those who pay for programs will have a key role in influencing program content, for which types of programs is it more appropriate for employees or employers to pay? To what extent should programs be subsidised from public sources? Should public funds be allocated directly to providers or to users? What types of incentive structures should be put in place? Economic analysis of the distribution of costs and benefits of different forms of provision will shed light on such questions.

2.5 Beneficiaries of Vocational Education and Training

A common theme running through the conference papers is that the benefits of vocational education and training are not uniformly spread. There was clear evidence that women participate to a lesser extent than men, and that the labour market outcomes for men are generally more positive. Employee status is an important influence on participation. In general, more senior and better educated employees have more company-provided training than those with lesser levels of educational attainment. Full-time and long-term employees receive more training than those who are part-time or casual. Those employed in the public sector generally receive more training than those in the private sector. Within the private sector there are significant differences in the incidence and length of training by industry sector and firm size.

Important equity and efficiency issues are raised by these differences between social and economic groups. Economists have a role to play in documenting the distribution of vocational education and training opportunities and benefits, and in analysing the causes and consequences of the uneven spread that presently exists. One useful starting point suggested by the conference would be to examine the role of enterprise agreements in determining the priority that companies give to training, in influencing which types of employees get access to training, and in shaping how training participation is converted into earnings and career benefits.

3. Maximising the Impact of Research

This reflection has drawn on the conference papers and discussion to sketch out a possible agenda for research on the economics of vocational education and training. Many other issues were raised at the conference that would be worthy additions to the agenda. Clearly, it is unlikely that all, or even a substantial part, of such an agenda could be tackled in the near future with the resources currently available. As indicated earlier, one response to this situation is to structure and link agenda items so that scarce research resources can serve multiple purposes. Another way is to build collaborative relationships with other groups of researchers, especially those from other disciplines. Perhaps the most important response is to ensure that the research that is done has maximum impact.

The most critical ingredient in maximising research impact is building professional collaboration with policy makers and practitioners. If research on the economics of vocational education and training is not grounded in the questions that matter in the field, there is little chance of having an impact or obtaining the resources that research needs. Strengthening links with policy makers and practitioners takes time and resources, and involves more than formal consultative or advisory mechanisms, although these are important in their own right. It requires establishing a presence in the various forums at which vocational education and training issues are discussed and debated, a preparedness to take part in those debates, and a willingness to consider a wide range of views.

The Australian National Training Authority Research Advisory Council places heavy weight on dissemination strategies when reviewing funding submissions. Unless dissemination is carefully planned right from the beginning, there is little prospect that research, no matter how worthy, will have an impact. Dissemination is an integral part of building collaboration with policy makers and practitioners, and a variety of creative dissemination strategies will need to be tried.

There are two further groups that need to be central to dissemination plans, but which are perhaps more challenging to reach: the economics profession; and enterprise decision makers. The economics profession is important because one of the key reasons for the Research Advisory Council's funding of this field is to encourage more economists to become involved in research on vocational education and training. Economists need to become convinced that this is an important area for applied and theoretical research. Dissemination of the work of the Centre for the Economics of Education and Training to other economists should be an important part of the strategy.

Those who make decisions at enterprise level are even more important to reach and involve in the research agenda. This will not be easy, since enterprises vary greatly in character and orientation, and enterprise personnel have many competing demands. Unless those responsible for the future of Australian industry become aware of research on the economics of vocational education and training - and play a collaborative role in that research - the full potential of the research agenda to generate positive change will not be realised.

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